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CRPL-F 206 PART A

FOR OFFICIAL USE

**PART A**  
**IONOSPHERIC DATA**

**ISSUED**  
**OCTOBER 1961**

**U. S. DEPARTMENT OF COMMERCE**  
**NATIONAL BUREAU OF STANDARDS**  
**CENTRAL RADIO PROPAGATION LABORATORY**  
**BOULDER, COLORADO**



IONOSPHERIC DATA

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## SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, and continuing through December 1956, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1957, the symbols used are given in NBS Report 5033, "Summary of Changes in Ionospheric Vertical Soundings, Observing and Scaling Procedures - Effective 1 January 1957," which draws upon the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, Sept. 2, 1956. A list of these symbols is available upon request.

In the Second Report of the Special Committee on World-Wide Ionospheric Soundings of the URSI/AGI Committee, May 1957, a new descriptive letter was introduced:

- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.

There was an expansion in meaning of the following:

- Z (1) (qualifying letter) Measurement deduced from the third magnetoionic component.  
(2) (descriptive letter) Third magnetoionic component present.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given above.

- a. For all ionospheric characteristics:

Values missing because of A, C, F, H, L, N or R are omitted from the median count.



b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the descriptive symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

B for fEs is counted on the low side when there is a numerical value of a higher layer characteristic; otherwise it is omitted from the median count.

S for fEs is counted on the low side at night; during the day it is omitted from the median count (beginning with data for November 1957).

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with CRPL-F188, Part A, issued April 1960, the count is given for foF2 in the tables of medians. It is regretted that space limitations prevent including detailed counts for other characteristics.



## WORLD - WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 142 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Commonwealth of Australia, Ionospheric Prediction Service of the  
Commonwealth Observatory:

Brisbane, Australia  
Townsville, Australia

Australian Department of National Development, Bureau of Mineral  
Resources, Geology and Geophysics:  
Mundaring, Western Australia

University of Graz:  
Graz, Austria

Belgian Royal Meteorological Institute:  
Dourbes, Belgium  
Lwiro (Central African Institute for Scientific Research)

Universidad Mayor de San Andres:  
La Paz, Bolivia

British Department of Scientific and Industrial Research, Radio  
Research Board:  
Halley Bay  
Ibadan, Nigeria (University College of Ibadan)  
Inverness, Scotland  
Port Lockroy  
Singapore, British Malaya

Defence Research Board, Canada:  
Churchill, Canada  
Ottawa, Canada  
Resolute Bay, Canada  
St. John's, Newfoundland  
Winnipeg, Canada

Universidad de Concepcion:  
Concepcion, Chile

Radio Wave Research Laboratories, National Taiwan University, Taipei,  
Formosa, China:  
Formosa, China

Czechoslovak Academy of Sciences:  
Pruhonice, Czechoslovakia

Danish National Committee of URSI:  
Godhavn, Greenland

General Direction of Posts and Telegraphs, Helsinki, Finland:  
Nurmijarvi, Finland

The Finnish Academy of Sciences and Letters:  
Sodankyla, Finland

French National Center for Telecommunications Studies:  
Tahiti, Society Is.

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover,  
Germany:  
Lindau/Harz, Germany  
Tsumeb, South West Africa

The Royal Netherlands Meteorological Institute:  
De Bilt, Holland

Indian Council of Scientific and Industrial Research, Radio Research  
Committee, New Delhi, India:  
Ahmedabad (Physical Research Laboratory)  
Bombay (All India Radio)  
Calcutta (Institute of Radio Physics and Electronics)  
Delhi (All India Radio)  
Kodaikanal (India Meteorological Department)  
Madras (All India Radio)  
Tiruchy (All India Radio)  
Trivandrum (All India Radio)

National Institute of Geophysics, City University, Rome, Italy:  
Rome, Italy

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:  
Akita, Japan  
Soya (Japanese Ship)  
Tokyo (Kokubunji), Japan  
Wakkanai, Japan  
Yamagawa, Japan

General Directorate of Telecommunications, Mexico:  
El Cerillo, Mexico

Christchurch Geophysical Observatory, New Zealand Department of  
Scientific and Industrial Research:

Campbell I.  
Christchurch, New Zealand  
Rarotonga, Cook Is.

Norwegian Defence Research Establishment, Kjeller per Lillestrom,  
Norway:

Tromso, Norway

Manila Observatory:

Baguio, P. I.

Institute of Terrestrial Magnetism, Ionosphere and Radio Propagation,  
Moscow, U.S.S.R.:

Moscow

South African Council for Scientific and Industrial Research:

Capetown, Union of South Africa  
Johannesburg, Union of South Africa

Research Institute of National Defence, Stockholm, Sweden:

Kiruna, Sweden  
Lycksele, Sweden  
Upsala, Sweden

Royal Board of Swedish Telegraphs, Radio Department, Stockholm, Sweden:

Lulea, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:

Sottens, Switzerland

National Bureau of Standards (Central Radio Propagation Laboratory):

Byrd Station, Antarctica  
Huancayo, Peru (Instituto Geofisico de Huancayo)  
Talara, Peru (Instituto Geofisico de Huancayo)



## TABULATIONS OF ELECTRON DENSITY DATA

Reduction of hourly ionospheric vertical soundings to electron density profiles has become a part of the systematic ionospheric data program of the Central Radio Propagation Laboratory, National Bureau of Standards. Scalings of ionograms for this purpose are being provided by ionosphere stations operated by several stations associated with CRPL. For the present, the hourly profile data from one CRPL station, Puerto Rico, are appearing in the monthly CRPL-F Reports, Part A. The very considerable task of scaling the ionograms for this purpose is being undertaken by T. R. Gilliland, Engineer in Charge, Puerto Rico Ionosphere Sounding Station; the computations are performed at the NBS Boulder Laboratories by a group headed by J. W. Wright. Basic conversion of virtual to true heights uses the well-known matrix method developed by K. G. Budden of the Cavendish Laboratory, Cambridge University, programmed by Dr. H. H. Howe for a CDC-1604 computer.

The tabulations provide the following basic electron density profile data for each hour of each day of the month:

<u>Quantity</u>	<u>Units</u>	<u>Remarks</u>
Electron Density (N)	$\times 10^3 = \text{electrons/cm}^3$	Body of table; given at each 10 km of height.
NMAX	$\times 10^3 = \text{electrons/cm}^3$	Always the highest value of N at each hour. To maintain this rule, the electron density at the next 10 km increment above HMAX is always given as exactly equal to NMAX (unless HMAX coincides with a 10 km level).
QUALification	(Alphabetic)	A standard scaling letter qualifying the observation when necessary.
KP		The standard Kp magnetic index, to one digit.
HMIN	Kilometers	The height of zero or very low electron density, obtained by linear extrapolation of the electron density vs. height curve.
SCAT	Kilometers	One half of the half-thickness of the parabola best fitting the upper portion of the F region profile. Approximates the scale height near the level HMAX.
HMAX	Kilometers	The height of maximum electron density, determined by fitting a parabola to the upper portion of the profile.
SHMAX	$\times 10^{10} = \text{electrons/cm}^2$ column.	Obtained by integration of the profile between the limits HMIN and HMAX.

Tabulations of the average electron densities each hour, at each 10 km level, for the quiet ionosphere, are also given. These averages include the profiles obtained when the magnetic character figure Kp is 4+ or less. The number of profiles entering the average for each hour is given by CNT. The other parameters of the layer, HMIN, SCAT, HMAX, SHMAX, and the mean value of Kp are given for each hour.

Before the averaging process, the individual profiles are extrapolated above HMAX by a Chapman distribution of 100 km scale height. This assumed model seems to agree well with the few published measurements dealing with the topside profile of the F-region.\* Extrapolation is necessary in order to calculate homogeneous averages near HMAX and the average profiles are, in fact, given up to 950 km. Also given are the average estimated integrated electron densities to infinity, SHINF (same units as SHMAX); this is an approximation to the total electron content in a column of the ionosphere.

\*See Wright, J. W. "A Model of the F-Region Above HMAX F2" J.Geophys.Res. V.65, pp.185-191.

## ELECTRON DENSITY

1 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QVLP	5	5	A3	A3				B3		A4	A4	A2
WMP	100	100	100	100				100	259		239	259
SCAT	87.0	76.4	64.7	50.0				48.7	48.5		25.8	43.1
HMAXF	208	300	207	209				294	170		321	360
SHMAX	560	525	558	664				398	379		197	343
RM												
370									564			
160									558			556
350									540			549
340									502			527
330				529					468		478	489
320				526					417		478	443
310	389		428	515					353		455	389
300	388	373	427	497				505	280		398	326
290	384	371	420	472				504	196		323	243
280	377	367	409	435				495	120		230	132
270	368	359	393	394				475	55.9		141	60.1
260	352	348	372	351				444	12.4		79.0	12.4
250	338	331	345	313				406			41.5	
240	322	315	320	285				361			12.4	
230	306	301	297	268				312				
220	290	288	278	258				247				
210	274	278	244	251				183				
200	264	268	255	245				134				
190	257	260	248	239				98.0				
180	253	254	242	231				75.1				
170	248	249	234	220				60.0				
160	239	240	228	207				50.2				
150	227	230	207	191				43.4				
140	205	216	180	149				39.1				
130	173	186	161	148				37.2				
120	154	166	152	135				36.1				
110	59.7	56.4	41.7	59.7				33.1				
100								19.7				

## ELECTRON DENSITY

2 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QWKP	A5	A5	A5	A5	A5	A1	A1	A1	A2	A2	A2	A4
HMN							109	96	249	249	238	249
SCAT							50,1	56,9	45,9	43,6	42,9	45,4
HMAX							281	288	361	351	348	353
SHMAX							588	383	267	238	221	228
KM												
370									409			
360									403	392		366
350											358	366
340									387	386	355	359
330									362	370	342	341
320									326	344	319	317
310									283	308	287	285
300									233	264	247	240
290							779	515	177	212	199	190
280							779	512	122	144	147	130
270							769	502	75,4	82,3	99,6	79,0
260							743	484	40,1	41,8	62,4	41,8
250							702	459	12,4	12,4	36,8	12,4
240							646	473				
230							563	370			12,4	
220							455	295				
210							340	203				
200							237	123				
190							179	73,1				
180							149	49,9				
170							129	37,9				
160							112	31,6				
150							96,7	27,7				
140							84,5	25,2				
130							75,7	24,0				
120							70,3	22,7				
110							39,4	20,4				
100								12,4				

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 JUN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O <sub>1</sub> XP	4	A4	A3	A3	3	3	B3	A3	A1	A1	A1	A1
HMIN	270	250	226	201	244	209						
SCAT	45.1	38.1	48.2	52.3	36.5	43.4						
HMAXF	248	334	246	306	331	307						
SHMAX	257	187	231	248	254	236						
KM												
350				389								
360				387								
370	411			380								
380	407			365								
390	394		325	344								
400	368		323	313	485							
410	338		316	268	485							
420	302	411	301	212	474							
430	258	408	279	128	442	385						
440	185	393	254	52.1	400	382						
450	121	343	224		348	370						
460	56.6	318	100		285	346						
470	1.7	236	152		185	315						
480		97.1	112		84.9	276						
490		12.4	74.6		32.9	235						
500			42.2			181						
510			18.4			113						
520						55.0						
530						12.4						

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 3 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O <sub>1</sub> XP	1	A1	A1	A1	A1	A2	A2	A2	A2	A2	A2	A2
HMIN	110											
SCAT	40.1								57.2			31.8
HMAXF	151								359			304
SHMAX	1130								685			225
KM												
360	985									898		
350	985									893		
340	976									874		
330	954									841		
320	919									793		
310	867									733		539
300	807									659		536
290	738									545		511
280	659									445		459
270	578									325		385
260	501									198		258
250	435									114		120
240	383									50.3		22.1
230	343									12.4		
220	317											
210	299											
200	260											
190	278											
180	253											
170	224											
160	201											
150	182											
140	166											
130	156											
120	149											
110	12.4											

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 JUN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
O <sub>1</sub> XP	A2	2	3	3	3	A2	A2	A2	3	A3	3	A1
HMIN	229	240	236	226	229	216		111	109	104	107	107
SCAT	39.8	44.2	31.9	45.8	40.8	42.5		29.9	44.8	87.9	54.6	60.0
HMAXF	319	341	305	332	324	327		272	287	327	321	321
SHMAX	273	237	187	206	188	173		295	579	814	792	925
KM												
350		390										
340		384		322	326	271						
330				316	325	269			613	714	874	
320	510	368							612	714	874	
310	503	341	450	303	317	260			607	707	866	
300	480	306	447	283	297	242			599	688	847	
290	440	263	425	255	270	220		707	586	658	810	
280	385	204	380	223	237	193		432	702	570	614	770
270	308	135	311	182	194	160		431	680	548	564	717
260	211	78.1	195	130	140	125		408	643	525	508	647
250	118	39.5	91.7	82.0	92.7	89.3		372	582	498	453	565
240	55.4	3.9	27.8	45.3	42.3	60.9		324	506	468	400	481
230	12.4			18.8	12.4	37.4		276	416	436	354	400
220						18.4		233	333	400	322	333
210								196	247	360	301	295
200								164	234	316	284	271
190								135	214	277	270	260
180								106	195	243	257	254
170								86.7	178	214	240	249
160								75.7	159	187	219	235
150								68.8	139	162	185	193
140								64.2	121	142	153	155
130								61.5	107	128	140	144
120								59.7	101	120	133	139
110									38.1	43.7	90.9	117

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 4 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
O <sub>1</sub> XP	1	A1	A1	A1	1	A1	A1	A1	A1	A1	1	3
HMIN	109		108	108	108	107						
SCAT	40.3		37.6	42.1	39.0	33.7			41.7	37.1	35.5	37.1
HMAXF	335		300	303	290	281			330	319	311	346
SHMAX	1035		1090	1144	973	778			491	391	342	364
KM												
350												648
340	1090											643
330	1087									850		616
320	1055									839	782	707
310	984		1457	1484						803	772	707
300	899		1457	1487						741	734	689
290	795		1429	1447	1398	1240				657	666	639
280	687		1344	1371	1376	1239				550	573	569
270	584		1218	1252	1309	1204				419	445	475
260	492		1055	1096	1195	1111				249	276	367
250	416		867	916	1040	976				141	127	214
240	366		687	737	838	792				76.4	41.2	33.0
230	313		543	574	633	591				36.5		
220	310		428	436	471	434						
210	295		348	343	358	313						
200	284		305	292	289	253						
190	275		281	263	252	222						
180	265		268	248	230	201						
170	254		257	239	218	185						
160	240		242	229	205	167						
150	224		226	214	184	148						
140	197		206	193	167	131						
130	162		178	163	143	113						
120	152		155	140	128	98.0						
110	49.2		96.2	109	50.9	52.1						



## ELECTRON DENSITY

RAMCY AFR, PUERTO RICO 60 W 5 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
FLYIN	A2	A2	2	A2	2	A2	2	A2	A2	2	2	2
HMIN			109		108		108		231	221	235	248
SCAT			62.2		38.7		53.9		79.3	40.6	39.5	35.7
HMAX			36.2		29.4		28.6		32.6	32.4	33.2	33.8
SHMAX			111.2		104.5		72.3		44.6	41.5	36.1	31.9
KM												
350			98.8									
360			98.8									
370			97.7						81.2	73.7	65.1	62.1
320			95.4						80.8	73.5	63.5	58.1
310			91.9						78.0	71.6	59.9	52.4
300			87.5		168.0				72.4	66.9	54.2	44.7
290			81.1		16.75		94.1		64.8	61.0	46.9	35.7
280			73.4		16.23		93.5		55.0	52.5	37.8	24.7
270			64.9		15.14		91.3		43.2	41.6	26.1	13.6
260			56.5		13.44		87.5		27.1	28.3	14.3	64.2
250			48.6		10.57		81.9		14.2	16.7	72.9	18.4
240			41.3		7.27		74.7		49.8	80.5	29.4	
230			35.2		4.62		65.2			38.7		
220			31.4		3.05		52.6					
210			28.9		2.54		37.3					
200			27.7		2.31		24.6					
190			26.3		2.17		18.2					
180			25.6		2.08		14.6					
170			25.1		1.99		11.8					
160			24.2		1.80		90.5					
150			21.8		1.51		73.7					
140			18.8		1.26		65.5					
130			16.5		1.36		60.9					
120			15.4		1.21		58.1					
110			85.0		59.9		39.7					

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 6 JUN 1961

[illegible]

## ELECTRON DENSITY

RAMEY AFR. PUERTO RICO

60 W

7 JUN 1961

[illegible]

## ELECTRON DENSITY

PAMEY AFR, PUERTO RICO

60 W

7 JUN 1961

[illegible]

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO

60 W

8 JUN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q, K, P	A3	A3	A3	A3	A3	A3						
H, M, T	271	233	190	278	211	232						
SCAT	44.5	13.0	35.8	45.3	44.1	33.3						
H, M, T	187	315	208	335	319	303						
SUMAX	456	385	340	385	398	190						
KW												
370		779										
360		774										
350		751										
340		708		616								
330		646		614								
320		669	827	599	669							
310		465	823	566	662	430						
300		310	780	651	523	638	420					
290		144	713	643	465	593	414					
280		53.6	614	610	394	538	378					
270			487	552	310	459	325					
260			300	474	200	349	251					
250			134	373	107	225	149					
240			43.9	258	50.2	134	51.6					
230					159	16.8	72.7					
220						90.5						
210						46.0	35.6					
200						12.4						

## ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

8 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A3	A3	A3	A3	A3	A3	A3	A3	A1	A1	1	1
HMIN					108			100	199	229	233	222
SCAT					50.1			44.2	42.9	44.8	41.3	34.0
HMAXF					316			287	318	345	334	316
SHMAR					1160			739	506	450	394	287
KW												
350										701		
340										698	678	
330										680	677	
320					1360				775	642	659	569
310					1355				768	592	620	565
300					1324				740	526	564	533
290					1267			1105	690	447	493	486
280					1183			1099	625	354	404	416
270					1064			1066	547	251	296	332
260					913			1001	465	153	176	234
250					755			915	370	84.8	85.5	138
240					608			805	264	42.2	34.7	74.3
230					484			670	172	12.4		35.5
220					378			505	106			
210					307			357	56.5			
200					266			231	12.4			
190					245							
180					232			97.2				
170					219			68.9				
160					203			53.3				
150					183			44.0				
140					152			38.2				
130					128			34.8				
120					118			33.1				
110					80.6			30.8				
100								19.7				

## ELECTRON DENSITY

9 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
WVLP	A2	2	A2	2	2	A2	A2	A2	A1	A1	1	1
GMF		108		109	109	107		100	199	215	231	271
SCAT		404.8		477.0	417.8	394.2		384.1	412.4	422.3	446.3	474.4
HMAXF		322		327	311	289		281	322	332	340	370
5MMHF		1267		1328	1255	1155		652	476	380	325	324
PM												
329												517
340												512
356											539	495
340											539	464
330	1561		1554						714	621	532	426
320	1560		1545	1712					713	606	511	371
310	1528		1503	1712					697	575	476	302
300	1448		1426	1684					661	525	424	230
290	1319		1314	1608	1877			1110	602	464	352	144
280	1165		1156	1490	1850			1110	590	398	275	54.7
270	976		977	1304	1761			1087	472	305	188	
260	796		701	1074	1616			1020	393	224	112	
250	630		628	832	1399			727	314	144	67.3	
240	490		489	623	1082			807	233	85.9	35.5	
230	397		392	456	707			638	162	46.7		
220	341		333	360	451			449	102	20.7		
210	310		304	297	291			285	48.0			
200	290		284	265	236			171	12.4			
190	286		271	240	215			108				
180	276		265	240	202			72.7				
170	264		258	230	190			55.6				
160	251		241	212	175			46.4				
150	226		221	188	152			40.1				
140	196		193	163	124			36.2				
130	171		169	143	109			34.1				
120	145		144	132	102			33.0				
110	81.4		59.7	38.1	81.5			30.3				
100								19.7				

## ELECTRON DENSITY

10 JUN 1961

[illegible]

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	11 JUN 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
O <sub>1</sub> PD	F1	A1	A0	0	0	0	AO	AO	1	1	A1	1		
HMIN	250	199	212	249	249	211		110	109	108		107		
SCAT	35.6	35.4	31.1	34.4	38.8	41.0		35.9	33.9	52.4		63.3		
HMAXF	345	282	282	338	326	298		253	304	295		336		
SHMAX	436	400	244	259	215	191		357	794	908		1245		
FM														
350	831													
340	827			494									1080	
330	795			487	422								1078	
320	727			441	420								1063	
310	645			414	405				815				1035	
300	544			358	377	356			814	985			993	
290	401	882	585	296	332	353			802	982			936	
280	250	881	585	218	276	339			775	964			871	
270	137	856	565	175	202	315			733	927			800	
260	57.8	795	515	61.9	94.2	278		567	680	869			725	
250		695	440	12.4	22.1	228		566	618	801			647	
240		530	327			155		549	547	715			568	
230		285	158			84.7		510	469	621			495	
220		131	52.6			40.1		443	401	527			427	
210		60.4						336	344	433			370	
200		12.4						247	304	361			332	
190								199	275	315			307	
180								168	251	283			290	
170								144	225	258			274	
160								125	197	232			260	
150								109	168	205			242	
140								96.6	143	175			219	
130								88.1	125	151			173	
120								83.5	115	136			154	
110								12.4	39.4	130			126	

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	11 JUN 1961
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
O <sub>1</sub> PD	1	A1	1	A1	1	0	AO	AO	1	1	1	4		
HMIN	107	109	107		108	108		100	200	249	262	236		
SCAT	51.6	47.4	54.8		56.2	39.0		38.1	56.9	46.0	39.4	46.2		
HMAXF	338	329	349		335	309		268	333	358	355	337		
SHMAX	1257	1230	1424		1531	1247		773	703	677	408	507		
FM														
360											747	747		
350											742	744		
340	1184		1424		1712				850	720	721	854		
330	1178	1287	1413		1708				849	678	671	849		
320	1152	1276	1378		1680				839	622	602	825		
310	1106	1237	1320		1625	1792			815	546	506	780		
300	1037	1166	1240		1542	1771			773	456	391	718		
290	952	1074	1132		1434	1690			726	348	270	632		
280	852	960	1004		1272	1552			673	240	138	508		
270	752	829	859		1055	1357		1491	605	144	47.6	330		
260	659	711	723		857	1097		1473	533	66.6		171		
250	574	604	606		676	861		1405	452	12.4		74.5		
240	495	507	508		527	654		1291	369			26.3		
230	430	426	429		406	494		1100	282					
220	379	367	372		332	373		818	183					
210	342	330	337		286	300		509	81.7					
200	320	306	306		261	259		230	12.4					
190	304	292	288		246	233		100						
180	292	283	278		233	214		55.4						
170	280	272	271		219	198		44.8						
160	263	261	262		210	182		39.7						
150	236	250	242		193	165		36.8						
140	201	238	200		166	143		35.2						
130	183	201	174		146	123		34.0						
120	175	176	166		133	111		32.0						
110	137	59.7	107		59.9	58.3		28.9						
100								12.4						

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO													60 W	12 JUN 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
O <sub>1</sub> PD	4	4	3	3	F3	2	A2	2	2	A2	A2	A2		
HMIN	224	210	239	292	249	210	100	100	108					
SCAT	37.4	37.9	40.5	35.9	41.1	33.9	36.8	46.0	44.1					
HMAXF	306	285	327	369	342	285	238	262	268					
SHMAX	398	285	205	166	199	146	136	304	454					
FM														
370				337										
360				331										675
350				313	340									675
340				282	340									665
330			374	260	332									643
320			377	185	315									602
310	819		358	114	287									557
300	814		332	51.0	251									498
290	782	567	296		210	300								424
280	718	564	250		161	299								335
270	629	545	188		111	284		374	534					227
260	495	505	116		50.0	260		374	529					128
250	298	447	55.5		12.4	228		368	511					46.5
240	125	362	12.4			189	215	353	478					
230	44.2	266				131	213	327	434					
220		149				69.2	203	298	381					
210		12.4				12.4	184	266	327					
200							158	233	282					
190							127	199	250					
180							94.0	166	226					
170							69.4	135	203					
160							53.7	102	179					
150							43.5	85.3	156					
140							37.8	78.1	129					
130							34.7	74.2	112					
120							33.1	71.9	106					
110							31.3	24.5	79.6					
100							22.6							

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO								60 W		12 JUN 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
O <sub>1</sub> KP	A2	A2	A1	A1	A1	AO	AO	BO	AO	AO	0	1	
HMTN							112	100		229	239	262	
SCAT							44.4	41.7		47.4	39.2	50.3	
HMAXF							296	302		337	333	372	
SHMAX							976	808		563	408	460	
FM													
380												675	
370												675	
360												665	
350												643	
340												602	
330												557	
320												498	
310								1281				424	
300							1298	1280				335	
290							1292	1256				227	
280							1254	1195				128	
270							1180	1097				46.5	
260							1080	971					
250							962	814					
240							816	600					
230							646	397					
220							483	248					
210							367	152					
200							281	98.4					
190							226	68.0					
180							193	54.1					
170							170	47.4					
160							152	43.2					
150							136	40.5					
140							124	38.9					
130							116	37.8					
120							92.8	35.9					
110								32.1					
100								19.7					

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO 60 W 13 JUN 1961

TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
QMAP	1	1	1	1	1	A1	A1	81	1	1	0	0
HMIN	107	107	107	109	109			100	203	219	232	279
SCAT	48.7	45.7	40.7	51.2	54.1			48.4	35.0	32.7	42.3	35.1
HMAXF	323	344	308	325	330			297	284	308	345	361
SHMAX	1354	1438	1363	1492	1406			1087	592	423	420	292
XM												
378												504
360												593
340		1488			1484							578
330	1491	1456		1688	1484						648	578
320	1490	1389		1684	1471						646	538
310	1466	1283	1776	1653	1432						627	474
300	1411	1157	1769	1592	1368						588	391
290	1325	1015	1600	1500	1275			1704		823	538	294
280	1206	872	1566	1340	1117			1694	1275	809	479	181
270	1060	746	1390	1225	1045			1648	1270	750	412	78.0
260		640	640	1150	1037	899		1566	1222	592	258	
250	732	551	936	840	757			1450	1122	486	181	
240	597	474	767	656	630			1271	972	345	98.4	
230	489	410	586	493	518			1012	754	197	38.0	
220	406	368	461	387	419			649	453	88.5		
210	354	307	370	328	348			371	176	12.4		
200	326	322	337	296	301			216	50.6			
190	309	307	311	275	277			123				
180	296	294	294	260	258			81.7				
170	285	282	281	250	236			62.0				
160	278	272	270	238	215			52.4				
150	271	253	262	220	192			47.1				
140	241	219	233	183	158			43.5				
130	202	188	193	161	130			41.4				
120	176	167	189	152	128			40.2				
110	131	52.0	117	39.4	35.4			39.0				
100								34.4				
								19.7				

## ELECTRON DENSITY

RAMEY AFR, PUERTO RICO 60 W 14 JUN 1961

[illegible]

## ELECTRON DENSITY

RAYEY AFR. PUERTO RICO				60 W				15 JUN 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
OKP	R3	R3										
HMIN			2	2	2	2	2	2	24	24	A4	A2
SCAT			108	109	103	111	110	100	230	245	279	279
HMAXF			50.9	42.3	47.9	52.6	41.1	40.9	45.3	38.7	51.5	36.4
SHMAX			345	312	323	330	298	293	328	350	388	381
KM			1556	1340	1348	1389	1030	770	577	451	559	452
390											819	838
380											814	838
370											794	819
360											758	765
350			1635								782	709
340			1630			1620					768	637
330			1596		1561	1620			941		728	551
320			1529	1712	1560	1604			933		662	440
310			1428	1711	1533	1558			903		579	319
300			1303	1678	1472	1473	1561	1240	848		485	196
290			1153	1597	1375	1377	1545	1238	774		375	94.0
280			990	1465	1249	1244	1484	1260	676		260	22.0
270			819	1311	1090	1079	1374	1139	568		158	
260			672	1124	918	883	1225	1033	435		65.9	
250			546	919	766	762	1023	909	247		12.4	
240			449	700	601	536	777	754	85.2			
230			386	530	487	408	557	545	12.4			
220			345	402	398	328	380	349				
210			323	340	340	285	270	205				
200			310	306	306	256	214	122				
190			302	287	281	234	180	79.2				
180			290	274	260	214	154	56.8				
170			271	261	239	192	132	45.8				
160			257	241	219	168	113	40.3				
150			250	212	201	141	97.9	37.3				
140			227	186	177	120	87.8	35.7				
130			189	164	154	111	81.8	34.7				
120			167	153	138	94.2	78.5	33.2				
110			59.0	50.7	80.7			12.4	20.9			
100									12.4			

## ELECTRON DENSITY

PAMEY AFR. PUERTO RICO				60 W				16 JUN 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q.KP	A3	A3	B3	A3	A3	A2	H2	B2	1	1	1	2
H.MF	108	108	109		107	108		100	201	239	229	229
SCAT	61.5	45.2	46.6		45.8	48.0		40.3	53.0	38.0	47.1	40.9
HMAXF	371	331	335		335	347		290	346	339	331	328
SHMAX	1638	1475	1564		1387	1543		980	928	638	673	601
KM												
180	1240											
170	1359											
160	1348											
350	1318					1877			1184			
340	1271	1635	1712		1561	1866			1181	1131	1080	
330	1202	1634	1707		1556	1816			1158	1114	1080	1070
320	1122	1609	1668		1518	1726			1114	1057	1066	1059
310	1029	1544	1589		1443	1592			1041	960	1028	1016
300	930	1435	1466		1326	1434			965	847	960	941
290	824	1302	1334		1199	1228		1704	868	708	878	838
280	722	1145	1181		1052	999		1678	762	534	763	703
270	629	971	1005		880	769		1600	650	365	602	521
260	521	811	834		719	571		1468	524	204	423	323
250	488	666	691		582	418		1302	388	81.7	266	165
240	437	539	577		473	328		1074	257	12.4	107	64.6
230	399	467	483		399	283		742	152		24.1	12.4
220	371	390	409		347	259		436	81.5			
210	349	352	362		314	246		216	38.9			
200	332	329	331		292	235		100				
190	317	314	311		276	220		59.8				
180	305	304	299		261	193		47.5				
170	294	295	288		246	158		41.9				
160	281	285	269		229	139		38.5				
150	263	267	241		202	129		36.3				
140	241	240	208		170	122		35.0				
130	214	206	183		149	118		33.8				
120	186	186	173		139	115		31.8				
110	81.6	106	41.7		75.3	79.8		28.4				
100								19.7				

## ELECTRON DENSITY

RAYEY AFR. PUERTO RICO					60 W					17 JUN 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300		
Q,KP	1	1	1	1	A1	A2	A2	A2	A1	1	1	2		
HM[IN	108	109	108	107					200	259	261	265		
SCAT	53.0	55.9	59.3	47.9					53.0	45.7	50.4	33.0		
HMAXF	366	344	351	374					349	375	385	358		
SHMAX	1347	1422	1525	1366					835	629	673	499		
FM														
390											976			
380										941	973			
370	1100									938	963			
360	1097		1411							915	914	990		
350	1076	1360	1411						1031	869	855	974		
340	1026	1358	1398						1025	799	779	907		
330	971	1338	1366	1561					1000	716	676	822		
320	904	1297	1313	1559					956	618	551	709		
310	829	1232	1244	1530					890	511	419	557		
300	752	1147	1147	1467					819	399	286	370		
290	676	1045	1040	1367					735	282	163	208		
280	608	921	917	1244					642	161	84.8	89.6		
270	546	792	795	1095					539	60.8	40.1	30.8		
260	493	668	674	912					432	12.4				
250	445	560	570	732					335					
240	407	472	480	552					246					
230	378	409	408	439					171					
220	358	367	357	368					113					
210	343	340	326	326					63.5					
200	332	323	308	303					12.4					
190	322	311	296	288										
180	311	303	290	279										
170	299	295	282	271										
160	284	283	267	257										
150	259	252	248	238										
140	222	213	223	213										
130	198	191	193	188										
120	188	180	175	170										
110	81.4	39.4	66.6	126										

## ELECTRON DENSITY

RAYEY AFR. PUERTO RICO				60 W				18 JUN 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
0.4KP	A3	3										
HMIN	109	108	A3	A3	93	4	4	R4	2	2	2	3
SCAT	63.7	48.3				109	108		239	269	260	261
HMAXF	351	335				55.6	63.5		57.3	50.1	42.0	50.6
HMAXK						343	335		393	393	365	378
KM	1200	1216				1219	1245		751	623	510	595
400									886	898		
380									885	897		
370									875	883		850
360	941								851	850	854	844
350	941					1275			810	800	851	822
340	933	1201				1274	1347		762	731	828	780
330	914	1197				1258	1345		702	647	781	726
320	884	1170				1222	1327		629	543	708	657
310	839	1109				1161	1293		546	426	619	574
300	787	1038				1087	1243		457	288	515	486
290	726	951				994	1175		372	179	385	375
280	661	846				881	1087		294	98.0	239	242
270	593	732				746	983		221	44.5	130	109
260	529	622				606	849		152	12.4	55.5	43.9
250	470	518				473	692		96.0		1.7	
240	423	441				372	505		50.7			
230	400	90				379	367		12.4			
220	367	354				274	270					
210	350	330				254	215					
200	338	318				239	182					
190	329	309				224	160					
180	319	304				209	139					
170	307	299				191	121					
160	290	284				171	104					
150	271	251				151	90.1					
140	239	209				130	80.0					
130	209	185				116	72.8					
120	183	176				109	68.6					
110	41.7	81.4				33.1	33.3					

## ELECTRON DENSITY

ARAFY AFR, RUERTO RICO				60 W				19 JUN 1961				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
QKFP	3	3	2	2	2		A2	A2		A1	1	A1
HMPN	249	229	270	267	237	211			107		109	
SCAT	34.7	38.6	35.8	40.2	39.6	36.4			95.8		66.5	
HMAXF	344	317	360	366	328	288			356		361	
SHMAX	404	393	353	446	402	306			995		1366	
FM												
370			654	681							1041	
360			654	679					651		1041	
350	812		640	664					650		1034	
340	809		597	635					646		1016	
330	780		542	590	754				639		981	
320	718	775	474	532	747				628		938	
310	617	768	390	461	712				614		890	
300	488	736	274	379	662				591		834	
290	344	678	179	277	589	651			570		777	
280	210	596	91.0	154	487	642			548		719	
270	110	478	12.4	40.8	344	609			523		662	
260	50.2	324			188	553			607		607	
250	12.4	161			83.7	472			471		553	
240		60.2			25.1	340			443		502	
230		12.4				160			415		455	
220						52.8			388		411	
210									359		371	
200									331		339	
190									301		315	
180									269		295	
170									233		280	
160									198		265	
150									162		247	
140									133		211	
130									118		172	
120									111		153	
110									78.7		41.7	

## ELECTRON DENSITY

[illegible]

## ELECTRON DENSITY

RAYMET AFB, PUERTO RICO				60 W				20 JUN 1961				
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
Q,KP	A2	A2	A2	A2	A2	2	R2	2	0	0	AO	A2
MMIN	262	250	220	259	259	249	100	108	108	108		
SCAT	47.5	54.5	51.8	45.9	43.3	40.5	59.2	58.4	67.6	65.8		
HMAXF	75	360	333	356	348	331	309	326	353	343		
SHMAX	609	638	514	407	372	356	474	691	1123	1329		
FM												
340	932											
370	929											
360	908	894		672	666				886	1179		
350	867	887		669	672				886			
340	802	865	775	651	660	672			878	1178		
330	724	828	775	615	636	672		675	861	1168		
320	626	777	764	567	595	659		673	834	1144		
310	509	706	739	499	536	626	562	662	795	1106		
300	364	616	700	414	453	572	558	641	751	1053		
290	215	521	644	300	343	497	547	610	702	990		
280	95.9	401	563	175	196	391	527	569	651	913		
270	37.9	249	458	74.6	84.3	252	500	515	601	827		
260		111	339	12.4	12.4	120	464	449	552	738		
250		12.4	207			32.7	414	385	506	646		
240			99.0					352	300	460	550	
230			42.2					280	286	418	461	
220			3.1					202	253	379	392	
210								143	227	341	347	
200								103	206	304	315	
190								75.8	187	272	291	
180								59.4	168	243	270	
170								49.3	146	215	245	
160								42.5	125	189	219	
150								18.7	106	165	190	
140								36.3	92.2	144	164	
130								36.9	85.2	126	151	
120								33.5	80.4	112	145	
110								30.4	28.9	79.8	81.6	
100								19.7				

## ELECTRON DENSITY

RAYEY AFR., RUERTO RICO				60 W				20 JUN 1961				
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q,KP	A2	2	3	R3	R3	4	A4	R4	A5	5	5	5
SCAT		108	108	108	107	107			266	241	259	291
HMAXF		54.3	50.4	54.4	57.8	73.6			46.9	41.7	45.1	47.2
SHMAX		331	322	345	338	357			387	350	385	421
FM		1612	1295	1342	1401	1529			885	953	985	944
430												1411
420												1410
410												1391
400												1341
390									1360		1484	1256
380									1352		1480	1144
370									1314		1444	1002
360						1234			1245	1635	1371	836
350				1298		1232			1144	1635	1260	649
340		1673		1296	1411	1219			1014	1609	1131	444
330		1672	1347	1275	1405	1194			846	1536	989	262
320		1655	1346	1232	1378	1158			654	1416	818	146
310		1609	1327	1164	1331	1108			461	1256	615	78.7
300		1524	1281	1081	1261	1132			284	1049	382	38.1
290		1430	1203	983	1172	987			167	800	213	
280		1316	1110	870	1061	918			69.1	518	111	
270		1173	996	753	926	846			26.0	285	49.6	
260		1008	856	639	785	775				122	12.4	
250		840	710	534	651	703				47.7		
240		684	590	446	538	632						
230		549	502	389	439	562						
220		445	430	353	367	488						
210		385	385	332	322	407						
200		349	355	319	293	333						
190		329	337	308	275	273						
180		315	323	293	261	235						
170		299	308	269	246	209						
160		282	288	245	226	186						
150		256	266	198	202	164						
140		228	234	163	178	140						
130		191	196	154	143	124						
120		172	160	146	133	116						
110		43.7	82.3	38.6	61.4	49.1						



## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												60 W	21 JUN 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q <sub>1</sub> KP	5	A5	4	4	4	6	86	6	6	6	6	84	
HMIN	251	231	200	199	229	305		110	109	108	106	108	
SCAT	38.2	39.9	29.0	42.7	48.2	48.4		76.2	79.7	40.6	38.0	63.9	
HMAXF	350	317	252	305	312	415		305	351	289	233	346	
SHMAX	792	857	476	211	95	87		366	628	684	341	928	
KM													
420						124							
410						124							
400						121							
390						116							
380						107							
370						97.5							
360						85.4		390					
350	1424					71.8		390			651		
340	1401					57.8		388			649		
330	1330					42.9		383			640		
320	1208	1635				163	28.9	375			623		
310	1058	1623				332	163	364			598		
300	883	1562				331	160	301	347		564		
290	684	1448				322	154	298	332	804	528		
280	446	1289				301	145	293	317	795	492		
270	191	1065				275	130	283	303	761	456		
260	57.6	779	1450			243	108	273	290	701	423		
250	399	1448	207			77.8		261	278	629	396		
240	102	1386	166			44.4		248	267	536	450	375	
230		1236	124			12.4		232	258	437	450	357	
220		855	79.9					214	249	365	437	343	
210		236	41.5					196	241	314	409	333	
200		12.4	12.4					179	232	284	367	324	
190								161	224	266	322	314	
180								142	214	254	289	304	
170								123	202	242	261	292	
160								105	184	226	229	276	
150								91.0	164	203	187	253	
140								81.7	144	173	164	220	
130								77.3	127	149	152	183	
120								74.0	117	140	146	169	
110								12.4	39.4	73.8	113	135	

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												60 W	21 JUN 1961
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q <sub>1</sub> KP	4	4	5	5	A5	A7	A7	B7	7	7	A7	A6	
HMIN	107	107	105	108				108	100	249	290	271	274
SCAT	53.9	64.4	75.3	71.4				52.1	58.8	47.3	46.6	49.5	46.6
HMAXF	311	312	363	375				355	375	371	394	386	385
SHMAX	1085	1075	1437	1424				1387	1448	1232	1427	1542	1371
KM													
400											2256		
390											2252	2330	2145
380											2205	2322	2139
370					1095						1547	1792	2205
360					1080	1094					1544	1792	2106
350					1079	1082					1561	1523	1769
340					1072	1061					1558	1478	1706
330					1054	1021					1529	1406	1592
320	1131	980	991	931							1471	1322	1460
310	1131	980	943	872							1381	1220	1299
300	1119	972	890	805							1272	1108	1110
290	1087	952	831	727							1144	988	890
280	1016	921	745	642							1004	850	653
270	947	676	601	558							838	709	440
260	874	822	616	481							673	564	255
250	762	756	545	421							535	427	95.8
240	639	682	480	379							421	318	12.4
230	514	592	425	351							337	233	
220	413	497	385	335							274	162	
210	353	417	357	322							232	116	
200	327	369	339	311							201	89.3	
190	312	339	325	296							176	72.8	
180	298	318	316	279							154	61.2	
170	284	300	302	262							134	53.0	
160	269	284	277	243							115	47.2	
150	250	268	233	212							98.8	42.7	
140	225	246	194	172							86.5	39.4	
130	195	208	178	158							77.1	37.1	
120	174	183	172	152							70.2	35.5	
110	56.1	89.8	66.0	55.6							66.6	34.5	
100											38.1	32.1	
											19.7		

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO												60 W	22 JUN 1961
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	
Q <sub>1</sub> KP	46	6	F5	F5	A5	A5	A5	F5	A4	F4	F4	A5	
HMIN	239	216	235	259	250	270					107		
SCAT	38.4	24.0	33.2	43.6	38.5	38.1					78.2		
HMAXF	335	265	322	377	350	351					357		
SHMAX	1251	628	499	538	507	396					824		
KM													
380				854									
370				849									
360				823		782							
350				771	941	782							
340	2363			703	926	765					567		
330	2351		1080	612	879	720					566		
320	2267			503	798	649					560		
310	2091		1047	373	696	566					550		
300	1857		960	264	568	434					535		
290	1540		828	176	375	235					513		
280	1143		642	106	215	79.8					490		
270	706	2058	445	49.7	114	12.4					462		
260	322	2034	228	12.4	48.6						431		
250	108	1863	92.1		1.7						398		
240	22.0	1471	29.4								361		
230		810									325		
220		75.9									299		
210											280		
200											266		
190											258		
180											254		
170											250		
160											245		
150											235		
140											206		
130											168		
120											140		
110											130		
											125		
											117		
											104		

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO								60 W		22 JUN 1961			
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
Q <sub>1</sub> KP	A5	A5	A5	5	A5	A5	A5	A5	A4	A4	A4	A2	
HMIN				108						239	244		
SCAT				87.0						52.4	45.4		
HMAXF				361						368	356		
SHMAX				1108						725	492		
KM													
370				768						985			
360				768						980	779		
350				765						957	776		
340				757						916	755		
330				744						858	711		
320				726						783	656		
310				701						696	585		
300				675						597	493		
290				640						476	379		
280				600						338	254		
270				555						216	141		
260				503						111	72.0		
250				452						50.7	30.7		
240				404						12.4			
230				362									
220				331									
210				310									
200				295									
190				282									
180				270									
170				245									
160				237									
150				217									
140				191									
130				166									
120				157									
110				38.6									

## ELECTRON DENSITY

PAMEY	AFR.	PUERTO RICO	60 W								23 JUN 1961			
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100		
PAVE	42	2			1	1	1	1	2	2	2	3		
HMIN	269	231	209	231	229	241	100	110	107	108	109	108		
SC	54.8	50.9	38.7	54.1	39.1	45.4	50.7	66.3	64.9	60.5	68.7	78.8		
HMAX	400	325	292	345	332	340	314	312	329	321	324	357		
SHMAX	739	553	384	417	226	210	287	543	873	1004	1258	1423		
KM														
410	941											1080		
400	941											1078		
390	933											1078		
380	909											1078		
370	869											1078		
360	810											1080		
350	748			588								1078		
340	677			587	380	342						1078		
330	591	928		577	380	338						1048		
320	498	925		356	371	326	310	505	775	941	1179	1048		
310	491	506		525	748	305	309	505	758	933	1167	1048		
300	262	870	747	486	319	277	304	501	736	913	1143	944		
290	153	815	747	438	282	240	292	491	703	879	1107	884		
280	59.7	733	728	375	241	197	273	476	664	828	1057	819		
270	12.4	599	686	292	192	137	252	453	615	774	998	748		
260		386	618	192	130	78.2	228	427	561	705	920	655		
250		193	529	93.8	70.9	37.4	202	399	503	623	813	583		
240	56.4		416	40.7	43.1		174	364	440	541	687	505		
230			245		12.4		148	323	381	463	562	442		
220			72.6				125	280	330	398	444	397		
210			12.4				103	242	291	350	375	365		
200							84.8	209	260	316	335	342		
190							69.3	181	237	291	310	326		
180							56.6	155	217	269	290	314		
170							47.5	131	197	247	270	302		
160							40.8	109	175	226	249	284		
150							36.5	91.0	153	203	227	256		
140							33.9	80.9	130	178	200	220		
130							32.5	76.5	118	153	171	191		
120							31.7	69.8	112	144	158	175		
110							29.6	12.4	45.0	54.3	33.5	54.3		
100							19.7							

## ELECTRON DENSITY

RAYEY AFB, PUERTO RICO										60 W		23 JUN 1961	
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	
TEMP	3	3		A2	A2	A2	A2	A2	2	F2	2		
WIND	108	104							267	267	236	229	
SCAT	63	57	12						57.1	41.7	42.8	42.0	
HMAXF	360	357							495	462	329	340	
SHMAX	1423	1435							930	765	848	747	

## ELECTRON DENSITY

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
OKP	2	2	1	1	1	1	A1	A1	A1	A1	A1	A1
HMIN	212	230	229	239	221	211	100	110				
SCAT	40.6	47.6	42.7	42.4	37.6	44.2	40.1	63.7				
HMAXF	307	344	338	338	316	303	301	305				
SHMAX	673	641	567	454	367	316	331	660				
KM												
350		985										
340		981	923	779								
330		964	915	772								
320		927	881	744	714							
310	1275	858	819	693	710	577	494	651				
300	1265	776	739	623	683	577	494	650				
290	1218	673	640	533	631	566	484	651				
280	1133	551	521	421	552	540	459	655				
270	1008	396	391	285	443	498	419	601				
260	823	229	254	159	309	432	367	569				
250	558	109	132	65.1	178	331	303	529				
240	291	43.7	57.5	12.4	83.5	210	232	483				
230	123	3.1	12.4		38.7	102	167	432				
220	4.8					60.7	119	378				
210							87.7	322				
200							67.1	269				
190							53.2	224				
180							43.3	189				
170							36.2	159				
160							31.9	133				
150							29.0	112				
140							27.0	96.8				
130							25.8	88.8				
120							25.1	70.7				
110							23.7					
100							15.6					

## ELECTRON DENSITY

[illegible]

## ELECTRON DENSITY

RAYEY AFB, PUERTO RICO													60 W 25 JUN 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>1</sub> XP	42	2	1	1	1	3	A3	A3	A2	A2	A2	A2	Q <sub>1</sub> XP	2	82	A2	A2	H2	A3	3	A3	A1	1	A1	1
HMIN	230	219	247	228	238	218							HMIN	106	106	107	106	108	105	108		249	258	244	229
SCAT	45.6	72.0	48.2	47.0	40.7	49.3							SCAT	47.2	42.5	52.5	59.9	50.1	51.2	42.4		55.6	39.2	40.4	36.3
HMAXF	324	371	343	332	333	324							HMAXF	349	340	342	372	335	310	314		384	366	330	326
SHMAX	623	756	410	745	303	310							SHMAX	1494	1537	1664	1941	1793	1536	1162		1037	858	848	787
KM													KM												
360		815											360									1347			
370		815											370				1877					1345			
380		811											380				1876					1326	1512		
390		799	675										390				1857					1285	1503		
340		778	674	562	541								350	1541		1712	1811					1218	1449		
330	1031	750	663	561	540	459							360	1546	1792	1711	1740	2145				1136	1340	1561	
320	1010	717	636	552	527	458							370	1497	1770	1691	1648	2141				1025	1201	1541	1561
310	1009	670	598	530	496	450							380	1407	1697	1639	1514	2100	1965	1561		896	1002	1472	1551
300	963	615	537	498	450	433							390	1293	1570	1553	1350	2016	1965	1558		742	794	1360	1487
290	891	548	460	446	388	405							300	1149	1415	1443	1162	1888	1946	1520		609	574	1188	1363
280	800	475	345	376	312	371							290	994	1229	1304	976	1712	1888	1438		430	334	975	1181
270	678	381	206	292	216	329							280	839	1034	1158	803	1498	1791	1311		270	161	689	945
260	517	261	89.3	188	117	280							270	690	862	1008	655	1247	1661	1164		134	65.9	393	635
250	337	154	24.0	101	55.3	225							260	569	704	851	538	992	1494	995		62.9	19.3	151	345
240	149	85.1		52.3	16.8	148							250	476	573	717	450	780	1287	824		17.4		41.8	162
230	12.4	41.8		17.2		63.6							240	414	468	601	389	606	1333	668				61.1	
220		17.4				17.8							230	375	392	499	349	455	741	533					17.4
210													220	352	348	421	323	368	512	416					
200													210	337	320	366	307	316	346	310					
190													200	326	301	329	296	283	272	240					
180													190	316	288	304	290	260	235	184					
170													180	304	279	288	280	245	212	147					
160													170	290	272	270	266	233	191	120					
150													160	270	250	245	242	216	168	74.5					
140													150	236	213	215	214	188	149	75.6					
130													140	192	173	189	175	170	127	66.5					
120													130	170	159	169	155	142	115	60.9					
110													120	160	152	161	146	132	110	58.0					
													110	116	98.0	124	88.8	49.0	49.1	30.1					

## ELECTRON DENSITY

RAYEY AFB, PUERTO RICO													60 W 25 JUN 1961												
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
Q <sub>1</sub> XP	2	82	A2	A2	H2	A3	3	A3	A1	1	A1	1	Q <sub>1</sub> XP	2	82	A2	A2	H2	A3	3	A3	A1	1	A1	1
HMIN	106	106	107	106	108	105	108						HMIN	106	106	107	106	108	105	108		249	258	244	229
SCAT	47.2	42.5	52.5	59.9	50.1	51.2	42.4						SCAT	47.2	42.5	52.5	59.9	50.1	51.2	42.4		55.6	39.2	40.4	36.3
HMAXF	349	340	342	372	335	310	314						HMAXF	349	340	342	372	335	310	314		384	366	330	326
SHMAX	1494	1537	1664	1941	1793	1536	1162						SHMAX	1494	1537	1664	1941	1793	1536	1162		1037	858	848	787
KM													KM												
360													360									1347			
370													370				1876					1345			
380													380				1876					1326	1512		
390													390				1857					1285	1503		
340	1541		1712	1811									350	1541		1712	1811					1218	1449		
330	1546	1792	1711	1740	2145								360	1546	1792	1711	1740	2145				1136	1340	1561	
320	1497	1770	1691	1648	2141								370	1497	1770	1691	1648	2141				1025	1201	1541	1561
310	1407	1697	1639	1514	2100	1965	1561						380	1407	1697	1639	1514	2100	1965	1561		896	1002	1472	1551
300	1293	1570	1553	1350	2016	1965	1558						390	1293	1570	1553	1350	2016	1965	1558		742	794	1360	1487
290	1149	1415	1443	1162	1888	1946	1520						300	1149	1415	1443	1162	1888	1946	1520		609	574	1188	1363
280	994	1229	1304	976	1712	1888	1438						290	994	1229	1304	976	1712	1888	1438		430	334	975	1181
270	839	1034	1158	803	1498	1791	1311						280	839	1034	1158	803	1498	1791	1311		270	161	689	945
260	690	862	1008	655	1247	1661	1164						270	690	862	1008	655	1247	1661	1164		134	65.9	393	635
250	569	704	851	538	992	1494	995						260	569	704	851	538	992	1494	995		62.9	19.3	151	345
240	476	573	717	450	780	1287	824						250	476	573	717	450	780	1287	824		17.4		41.8	162
230	414	468	601	389	606	1333	668						240	414	468	601	389	606	1333	668				61.1	
220	375	392	499	349	455	741	533						230	375	392	499	349	455	741	533					17.4
210	352	348	421	323	368	512	416						220	352	348	421	323	368	512	416					
200	337	320	366	307	316	346	310						210	337	320	366	307	316	346	310					
190	326	301	329	296	283	272	240						200	326	301	329	296	283	272	240					
180	316	288	304	290	260	235	184						190	316	288	304	290	260	235	184					
170	304	279	288	280	245	212	147						180	304	279	288	280	245	212	147					
160	290	272	270	266	233	191	120						170	290	272	270	266	233	191	120					
150	270	250	245	242	216	168	74.5						160	270	250	245	242	216	168	74.5					
140	236	213	215	214	188	149	75.6						150	236	213	215	214	188	149	75.6					
130	192	173	189	175	170	127	66.5						140	192	173	189	175	170	127	66.5					
120	170	159	169	155	142	115	60.9						130	170	159	169	155	142	115	60.9					
110	160	152	161	146	132	110	58.0						120	160	152	161	146	132	110	58.0					
100	116	98.0	124	88.8	49.0	49.1	30.1						110	116	98.0	124	88.8	49.0	49.1	30.1					

## ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

27 JUN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
A <sub>1</sub> F <sub>0</sub> D	C2	C2	C3	C3	C3	C3	C3	C3	C3	A3	A3	A1
LWNTN										109		108
SCAT										56.8		52.9
HMAXF										316		338
SUMMX										809		1041
KR												
340												941
330												935
320										758		913
310										756		874
300										743		818
290										710		752
280										682		683
270										637		606
260										586		527
250										525		455
240										463		397
230										404		352
220										352		323
210										315		305
200										288		292
190										268		283
180										248		274
170										228		264
160										205		248
150										178		224
140										155		195
130										140		172
120										132		159
110										33.0		53.9

## ELECTRON DENSITY

RAMFAY ACR, PUERTO RICO

CA, DU

27 JUN 1961

TJMF	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300
WXP	1	1	0				0	0		0		
HMIN	108	108	107				110	100	221	226	256	235
SCAT	60.0	61.5	57.3				45.0	60.3	37.4	32.1	41.7	43.7
HMAXF	338	332	325				294	335	326	324	337	338
SHMAX	1237	1194	1147				771	898	520	514	465	440
KW												
340	1121	1080					1008				842	744
330	1116	1080	1170				1006	907	907		836	738
320	1065	1070	1176				993	932	904		807	712
310	1060	1046	1153				966	871	875		750	664
300	1004	1007	1104				1027	923	804	812	682	602
290	941	952	1035				1024	870	727	734	583	520
280	865	888	946				1001	802	629	636	465	419
270	779	812	839				954	718	510	512	297	286
260	688	728	722				881	627	359	391	120	155
250	596	640	608				794	528	204	230		72.5
240	508	554	504				689	418	102	93.1		12.4
230	427	475	418				556	313	41.1	28.3		
220	344	400	341				416	218				
210	272	357	296				306	148				
200	207	324	204				226	102				
190	164	303	200				182	73.2				
180	127	288	282				165	54.2				
170	77	272	276				132	44.5				
160	257	251	260				111	40.0				
150	235	223	249				94.4	37.2				
140	208	193	207				81.8	35.6				
130	182	171	177				72.3	34.6				
120	166	161	161				66.8	33.1				
110	53.0	81.6	83.2				12.4	30.1				
100								12.4				

## ELECTRON DENSITY

RAMFAY AFB, PUERTO RICO

60 W

28 JUN 1961

TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100
FXPD		1	A1		1	2		2	A2			
HMTN	242	213	218	274	242	259		109	106			
SCAT	39.3	44.0	47.3	39.2	40.3	40.4		42.6	37.8			
HMAXF	338	311	327	371	336	331		261	260			
SHMAX	391	401	296	250	245	214		414	515			
FM												
350				436								
370				436								
390				428								
410				403								
430				370	442	424						
450	707			370	440	424						
470	700		446	327	440	424						
490	671	710	443	270	426	416						
510	621	710	431	211	397	394						
530	444	699	407	141	356	360						
550	450	689	376	77.1	300	307						
570	349	623	338	31.6	235	232						
590	226	545	286		156	140		648				
610	113	440	230		80.6	25.1		648	747			
630	42.9	306	167		36.6			638	735			
650		165	106					610	696			
670		81.0	53.2					568	631			
690		34.1	16.9					481	536			
710								340	445			
730								233	315			
750								186	254			
770								157	224			
790								131	206			
810								105	187			
830								84.6	167			
850								74.3	137			
870								69.1	113			
890								66.4	100			
910								38.4	94.3			

## ELECTRON DENSITY

RAMEY AFR. PUERTO RICO

ER, PU

28 JUN 1961

[illegible]

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO											
60 W											
29 JUN 1961											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000 1100
Q <sub>z</sub> FP	A6	A6	A5	5	5	F3	R3	A3	A3	3	3 2
HMIN	209	259	306	277	289	285	100			110	109 109
SCAT	35.6	28.4	40.8	45.5	47.1	42.7	43.4			42.2	47.7 78.3
HMAXF	367	332	413	383	390	380	300			286	295 328
SHMAX	287	259	217	264	270	246	307			469	519 744
KM											
420			354								
410			354								
400			347								
390			326	420	430						
380			298	420	426	409					
370	591		264	412	411	404					
360	585		222	391	386	387					
350	556		173	365	354	360					
340	504	619	125	331	313	323					
330	436	618	78.7	288	250	279					515
320	353	594	48.6	232	189	228					513
310	244	528	18.8	153	105	172	426				508
300	82.1	441		87.1	48.6	91.8	426				476 498
290		338		46.2	12.4	31.7	420				474 475 484
280		192		19.3			403				471 465 464
270		75.0					376				457 441 443
260		12.4					334				427 413 419
250							278				391 380 392
240							216				353 338 366
230							162				316 299 342
220							122				285 270 321
210							92.5				262 253 304
200							73.1				246 246 290
190							59.5				237 243 279
180							50.9				228 240 271
170							45.0				215 237 266
160							40.9				194 219 261
150							38.2				165 190 245
140							36.3				140 163 212
130							35.1				124 150 181
120							34.1				115 144 164
110							30.5				12.4 39.4 41.7
100							12.4				

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO											
60 W											
29 JUN 1961											
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200 2300
Q <sub>z</sub> FP	B2	2	A2	2	2	A2	A2	A2	A2	2	2 1
HMIN	109	108		107	105		111		259	240	229 237
SCAT	66.1	66.4		78.0	48.2		50.6		41.8	38.7	37.8 60.5
HMAXF	320	335		325	289		307		336	325	304 362
SHMAX	807	872		1041	687		648		349	339	302 412
KM											
370											541
360											541
350											536
340		675							651		523
330		674							647	651	503
320	654	667							626	648	477
310	650	652							584	627	602 438
300	640	629							714	529	582 600 386
290	620	597							594	456	520 581 326
280	593	561							654	433	541 248
270	562	520							612	194	317 482 153
260	522	474							566	30.3	186 403 86.9
250	477	426							490		75.4 301 44.6
240	429	383							471		142 16.2
230	383	347							400		25.1
220	346	321							407		
210	317	301							361		
200	295	287							299		
190	280	280							274		
180	269	275							261		
170	263	264							252		
160	256	236							236		
150	249	212							213		
140	229	194							192		
130	188	182							174		
120	166	174							163		
110	19.4	128							155		

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO											
60 W											
30 JUN 1961											
TIME	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000 1100
Q <sub>z</sub> FP	1	1	1	1	1	0	B0	A0	0	0	A0 A0
HMIN	225	232	232	250	240	219			108	109	
SCAT	33.3	42.3	43.5	40.8	44.8	42.7			36.1	45.9	
HMAXF	308	309	310	330	311	304			248	278	
SHMAX	234	220	164	109	118	101			343	566	
KM											
330				219							
320				313	216	223					
310	445	426		313	207	223	181				
300	477	427	309	190	210	180					
290	446	405	297	166	210	176					
280	399	378	276	127	197	166				657	
270	341	331	239	66.6	175	151				651	
260	264	265	189	12.4	140	128				630	
250	160	172	117		91.5	99.8				442	592
240	73.3	62.4	44.5		12.4	68.4				437	541
230						40.4				416	468
220						12.4				377	391
210										333	324
200										290	285
190										253	260
180										225	246
170										201	230
160										183	209
150										166	171
140										146	139
130										123	127
120										107	121
110										61.1	41.7

## ELECTRON DENSITY

RAMEY AFB, PUERTO RICO											
60 W											
30 JUN 1961											
TIME	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200 2300
Q <sub>z</sub> FP	A0	50	1	A1	A1	1	A1	A1	A3	A3	F3
HMIN	107	107	109	105	106					219	232
SCAT	41.1	45.2	49.4	49.0	52.2					40.6	40.3
HMAXF	328	329	328	319	329					287	336
SHMAX	1058	1232	1267	1166	1203					485	248
KM											
340											430
330		1095	1360	1379		1298					428
320		1085	1347	1379		1288					413
310		1031	1301	1334		1254					384
300		963	1222	1264		1196					345
290		880	1110	1178		1116				1031	294
280		788	980	1071		1164	1011			1024	233
270		699	841	937		1034	896			987	158
260		610	696	793		888	777			917	95.4
250		526	565	654		735	651			817	54.0
240		452	440	528		570	527			641	27.5
230		392	388	430		425	417			247	
220		350	339	361		334	341			25.1	
210		322	308	318		284	287				
200		301	288	291		260	253				
190		286	280	278		246	233				
180		277	275	264		230	218				
170		264	267	243		218	204				
160		242	253	223		168	187				
150		212	235	201		152	167				
140		179	211	182		144	145				
130		164	186	167		140	123				
120		157	173	158		137	112				
110		83.2	99.6	41.7		67.8	94.2				

AVERAGE ELECTRON DENSITY													KP BELOW 4.5																									
RAMEY			AFR.			PUERTO RICO			60 W							JUN 1961																						
TIME			0000			0100			0200			0300			0400			0500			0600			0700			0800			0900			1000			1100		
COUNT			24	26	26	26	25	22	23	8	12	14	15	12	11																							
KP			2.0	2.0	1.8	1.8	1.7	1.8	1.6	1.7	1.7	1.7	1.8	2.2	1.9																							
HMIN			246	230	222	237	231	231	100	110	109	108	108	108	108																							
RATIO			6.2	6.4	6.5	5.9	6.1	6.1	4.9	4.4	4.1	3.7	3.4	3.4																								
SCAT			39.9	40.9	40.1	43.3	41.9	42.0	43.0	49.7	53.1	58.8	62.6	64.5																								
NMAX			762	723	633	487	436	389	364	528	669	793	854	918																								
HMAXF			341	318	312	331	322	320	284	285	294	306	332	339																								
SHMAX			422	395	332	284	241	219	268	456	650	828	1006	1086																								
SHWNE			2572	2435	2118	1658	1471	1316	1296	1947	2538	3064	3415	3675																								
KM																																						
950			59.6	51.4	42.6	36.8	31.2	27.6	22.2	31.8	42.8	53.0	64.7	71.4																								
900			76.5	66.0	54.7	47.2	40.0	35.4	28.5	40.9	55.0	68.0	83.0	91.6																								
850			98.1	84.7	70.2	60.6	51.3	45.4	36.5	52.4	70.5	87.2	106	118																								
800			126	109	90.0	77.6	65.8	58.2	46.9	67.2	90.4	112	136	151																								
750			161	139	115	99.3	84.2	74.5	60.0	86.2	116	143	175	193																								
700			205	178	147	127	108	95.2	76.8	110	148	183	223	246																								
650			261	226	188	161	137	121	98.1	141	189	234	284	313																								
600			330	287	238	204	174	154	125	179	240	297	360	396																								
550			413	361	300	256	219	193	158	227	303	374	451	496																								
500			509	447	374	316	271	240	198	284	378	466	557	611																								
450			610	542	456	381	330	292	244	350	463	570	672	734																								
KM																																						
440			629	562	473	394	341	302	253	364	480	591	695	758																								
430			648	581	490	406	353	312	263	378	498	612	717	781																								
420			667	599	506	418	364	323	273	392	516	633	738	803																								
410			684	617	522	430	375	332	283	406	533	654	759	824																								
400			699	634	538	440	386	342	292	420	550	674	778	844																								
390			713	650	553	450	396	351	302	434	566	694	796	861																								
380			725	665	567	459	405	359	311	447	582	712	811	877																								
370			734	678	580	466	413	366	320	460	597	729	825	889																								
360			738	690	592	471	420	372	328	472	610	744	835	899																								
350			737	697	601	472	426	376	336	484	622	758	835	904																								
340			728	701	608	469	429	379	343	494	633	769	845	905																								
330			705	699	610	461	430	380	349	503	640	777	842	900																								
320			667	690	607	445	425	376	354	510	646	781	832	886																								
310			612	674	595	419	411	366	357	515	647	781	813	862																								
300			537	646	576	385	387	348	358	517	646	774	784	829																								
290			449	601	548	343	352	322	355	515	639	760	747	780																								
280			355	536	504	293	305	288	342	509	628	736	700	725																								
270			266	442	445	234	245	242	333	498	608	703	649	662																								
260			188	328	376	174	177	188	312	480	580	659	591	592																								
250			118	218	299	117	120	135	282	453	542	608	530	521																								
240			59.6	122	211	71.3	73.5	85.0	245	417	493	548	468	456																								
230			21.4	56.0	115	38.2	39.5	41.5	205	374	438	484	411	399																								
220			6.2	24.4	58.8	16.3	13.7	16.4	164	323	380	419	364	357																								
210			5.5	6.3	16.3	7.2	1.1	1.1	128	267	328	360	330	328																								
200			1.0	1.4	1.0				99.8	221	286	315	307	309																								
190									78.2	188	254	283	289	295																								
180									62.1	159	229	260	274	285																								
170									50.8	134	205	239	260	275																								
160									43.3	111	181	216	240	260																								
150									38.5	94.0	156	189	214	235																								
140									35.4	82.3	133	163	185	203																								
130									33.7	75.8	116	142	160	176																								
120									32.4	68.9	107	130	146	160																								
110									29.7	18.8	49.4	68.7	75.3	87.3																								
100									18.4	18.4	18.4	18.4	18.4	18.4																								

440	629	562	473	394	341	302	253	364	480	591	695	750
430	648	581	490	406	353	312	263	378	498	612	717	781
420	667	599	506	418	364	323	273	392	516	633	738	803
410	684	617	522	430	375	332	283	406	533	654	759	824
400	699	634	538	440	386	342	292	420	550	674	778	844
390	713	650	553	450	396	351	302	434	566	694	796	861
380	725	665	567	459	405	359	311	447	582	712	811	877
370	734	678	580	466	413	366	320	460	597	729	825	889
360	738	690	592	471	420	372	328	472	610	744	843	899
350	737	697	601	472	426	376	336	484	622	758	843	904
340	728	701	608	469	429	379	343	494	633	769	845	905
330	705	699	610	461	430	380	349	503	640	777	842	900
320	667	690	607	445	425	376	354	510	646	781	832	886
310	612	674	595	419	411	366	357	515	647	781	813	862
300	537	646	576	385	387	368	358	517	646	774	784	829
290	449	601	548	343	352	322	355	515	639	760	747	780
280	355	536	504	293	305	288	347	509	628	736	700	725
270	266	442	445	234	245	242	333	498	608	737	649	662
260	188	328	376	174	177	188	312	480	580	659	591	592
250	118	218	299	117	120	135	282	453	542	608	530	521
240	59.6	122	211	71.3	73.5	85.0	245	417	493	548	468	456
230	21.4	56.0	115	39.2	39.5	41.5	205	374	438	484	411	399
220	6.2	24.4	58.8	16.3	13.7	16.4	164	323	380	419	364	357
210	.5	6.3	16.3	7.2	1.1	1.1	128	267	328	360	330	328
200	1.0	1.0	1.4	1.0			99.8	221	286	315	307	309
190							78.2	188	254	283	289	295
180							62.1	159	229	260	274	285
170							50.8	134	205	239	260	275
160							43.3	111	181	216	240	260
150							38.5	94.0	156	189	214	235
140							35.4	82.3	133	163	185	203
130							33.7	75.8	116	142	160	176
120							32.4	68.9	107	130	146	160
110							25.7	18.8	49.4	68.7	75.3	87.3
100							18.4					



# TABLES OF IONOSPHERIC DATA

APRIL 1961 - FEBRUARY 1955

Table 1

Talara, Peru (4.6° S, 81.3° W)									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	7.9	26	210					3.25	
01	6.55	28	<230					3.00	
02	6.45	26	240					3.10	
03	5.7	27	235					3.25	
04	4.9	26	240					3.20	
05	3.6	26	250					3.25	
06	3.2	26	265					3.00	
07	6.6	29	250		125	2.00		3.20	2.4
08	8.7	29	230		115	2.80		3.00	
09	9.6	29	220		115	3.25		2.70	3.4
10	9.85	30	210		113	3.50		2.40	3.6
11	10.05	30	205	(5.0)	112	3.65		2.20	
12	(340)	10.0	30	(5.0)	111	3.70		2.15	
13	(340)	10.05	30	4.9	111	3.70		2.25	
14	---	10.15	30	---	111	3.60		2.40	
15	---	11.0	29	---	111	3.40	3.4	2.50	
16	---	11.4	29	---	115	3.05		2.55	
17	---	11.15	30	---	(117)	2.65	2.9	2.50	
18	10.8	30	260		<130	2.00	3.0	2.45	
19	10.7	30	305					2.5	
20	10.8	27	320					1.0	
21	11.3	23	265					2.0	
22	11.65	22	230					2.70	
23	>10.8	25	210					3.20	
								3.35	

Time: 75.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Huancayo, Peru (12.0° S, 75.3° W)									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	7.6	25	225					3.25	
01	7.0	29	220					3.32	
02	5.75	26	225					3.25	
03	4.7	27	240					3.25	
04	3.95	20	240					3.35	
05	3.2	27	245					3.05	
06	4.05	28	265					3.25	
07	7.7	29	240		123	2.30		3.02	
08	9.6	28	225		117	(2.90)	5.3	2.65	
09	10.3	29	215		---	(3.30)	6.0	2.50	
10	9.4	29	210		---	(3.60)	7.0	2.52	
11	8.7	29	200		---	(3.70)	6.6	2.55	
12	8.6	29	200		---	(3.80)	7.0	2.55	
13	>9.0	30	200		---	(3.70)	7.0	2.55	
14	9.5	30	200		---	(3.50)	6.5	2.55	
15	10.0	30	200		113	(3.35)	6.7	2.55	
16	10.3	29	220		113	(2.95)	6.2	2.50	
17	10.0	29	250		(117)	(2.40)	5.5	2.40	
18	9.55	30	280		---	(1.45)		2.55	
19	8.6	29	340					2.00	
20	8.6	25	305					2.55	
21	0.7	23	250					2.00	
22	8.6	23	230					3.12	
23	8.2	25	225					3.20	

Time: 75.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 3

Resolute Bay, Canada (74.7° N, 94.9° W)									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.2	30	250					3.0	
01	3.9	30	255					3.0	
02	3.8	29	275					2.9	
03	3.6	30	280					3.0	
04	4.2	30	260					3.0	
05	3.7	27	270					3.0	
06	4.3	29	260			1.8		3.05	
07	4.3	30	250			2.0		3.0	
08	(380)	4.9	30	---		2.0		3.0	
09	315	5.0	29	240	3.2	2.1		2.9	
10	340	5.2	27	240	3.6	2.2		3.0	
11	340	5.4	30	235	3.6	2.3		3.0	
12	330	5.4	29	240	3.7	2.4		3.0	
13	320	5.7	29	230	3.6	2.4		3.0	
14	295	5.2	26	235	3.8	2.2		3.0	
15	320	5.1	27	240	3.6	2.1		2.95	
16	310	5.0	27	250	---	2.0		3.0	
17	---	4.9	30	250	---	2.0		3.0	
18	---	4.5	31	260	---	1.8		3.0	
19	---	4.9	31	250	---	---		3.0	
20	---	4.9	31	260	---	---		3.0	
21	---	4.7	29	250	---	---		3.0	
22	---	4.1	30	260	---	---		3.0	
23	---	4.1	31	260	---	---		2.95	

Time: 90.0°W.  
Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 5

Kiruna, Sweden (67.8° N, 20.3° E)									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(3.2)	3	325				3.4	---	
01	(3.2)	7	340				2.5	---	
02	(3.0)	6	335				1.8	---	
03	(2.7)	8	325				1.4	(2.55)	
04	2.7	11	290				2.7	---	
05	3.4	13	275				2.8	---	
06	4.0	20	265				2.9	---	
07	---	5.0	25	250	---	1.7	3.0	---	
08	290	5.8	26	240	3.6	---	3.0	---	
09	290	5.9	27	230	3.6	110	2.3	3.05	
10	260	6.2	28	230	3.8	110	2.4	3.0	
11	280	6.0	25	225	3.8	110	2.6	3.0	
12	275	7.0	29	230	3.8	110	2.6	3.1	
13	260	6.7	31	225	3.8	110	2.6	3.0	
14	260	6.5	29	235	3.6	115	2.4	3.0	
15	260	6.2	30	240	3.4	115	2.2	3.1	
16	---	6.0	20	245	---	120	2.2	3.1	
17	---	5.6	23	250	---	---	1.8	3.0	
18	---	5.2	18	250	---	---	---	(2.9)	
19	---	5.6	10	250	---	---	---	(2.9)	
20	---	3.8	10	275	---	---	---	---	
21	(4.0)	7	280				3.0	---	
22	(3.2)	5	300				3.0	---	
23	(3.1)	5	305				3.0	(2.7)	

Time: 15.0°E.  
Sweep: 0.8 Mc to 15.0 Mc in 30 seconds.

Table 4

Tromsø, Norway (69.7° N, 19.0° E)									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(3.3)	2	---				4.0	---	
01	(3.1)	3	---				3.2	---	
02	(2.6)	4	---				3.1	---	
03	(3.1)	5	---				2.7	---	
04	(2.6)	6	(310)				3.0	---	
05	>3.2	9	290				2.2	(2.70)	
06	3.9	12	275				---	(2.85)	
07	5.1	15	250				---	3.10	
08	(250)	5.7	20	245	---	120	2.00	3.10	
09	---	6.0	17	245	---	120	2.20	(3.10)	
10	(240)	6.0	21	235	---	110	2.60	3.05	
11	270	6.6	24	235	---	115	2.60	3.10	
12	(245)	6.7	24	225	3.60	120	2.50	3.10	
13	(245)	6.8	27	240	---	120	2.55	3.10	
14	(245)	6.4	28	240	---	110	2.40	3.10	
15	(240)	6.2	24	245	---	120	2.25	3.10	
16	250	6.0	25	250	---	130	2.20	3.10	
17	---	5.6	17	250	---	1.70	1.8	3.10	
18	---	5.0	16	250	---	130	1.95	(3.00)	
19	(4.6)	6	255				2.9	---	
20	(4.5)	5	(260)				3.2	---	
21	(4.0)	2	(205)				>3.3	---	
22	(3.8)	2	---				3.4	---	
23	(3.5)	2	---				3.0	---	

Time: 15.0°E.  
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 6

Sodankylä, Finland (67.4° N, 26.6° E)									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(4.7)	3	320				2.7	---	
01	(3.6)	2	340				2.3	---	
02	(3.8)	2	340				2.3	---	
03	(3.5)	3	330				1.9	---	
04	(3.4)	2	310				---	---	
05	(3.6)	1	300			E	---	---	
06	(4.0)	7	290			---	---	(2.90)	
07	---	4.2	22	260	---	1.75	---	2.95	
08	---	5.0	25	250	---	130	2.05	3.00	
09	---	6.0	26	235	---	120	2.40	3.00	
10	---	6.0	24	230	---	120	2.50	3.00	
11	---	6.5	26	225	---	115	2.60	3.00	
12	---	6.9	25	220	---	115	2.60	3.00	
13	---	7.1	27	220	---	120	2.70	3.10	
14	---	7.0	26	230	---	120	2.65	3.00	
15	---	6.7	25	230	---	120	2.50	3.10	
16	---	6.6	26	235	---	125	2.40	3.10	
17	---	6.2	26	250	---	130	2.15	3.10	
18	---	5.8	18	250	---	150	E	3.00	
19	---	5.6	14	250	---	---	E	3.00	
20	---	(5.6)	9	260	---	---	E	2.90	
21	---	(4.1)	7	270	---	---	---	2.3	(2.85)
22	---	(3.8)	7	290	---	---	---	2.5	(2.85)
23	---	(4.4)	4	320	---	---	---	2.5	---

Time: 30.0°E.  
Sweep: 1.4 Mc to 22.0 Mc in 8 minutes, automatic operation.

Table 7

Lulea, Sweden (65.6° N, 22.1° E)

March 1961

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(3,2)	12	320					(2,7)
01	2.7	11	315					(2,8)
02	(2,5)	12	305					(2,7)
03	2.4	11	295					2,85
04	2.3	14	300					2,85
05	2.8	19	290					2,9
06	3.8	22	260		---	---		3,15
07	5.1	23	250		135	2.1		3,2
08	5.8	24	240		130	2.3		3,2
09	6.0	21	230		130	2.5		3,1
10	6.7	21	230		125	2.6		3,2
11	6.9	19	225		125	2.7		3,1
12	---	7.0	25	230	120	2.8		3,2
13	---	6.9	26	230	125	2.6		3,1
14		7.0	24	240	130	2.6		3,2
15		6.4	25	240	135	2.4		3,2
16		6.3	25	245	140	2.2		3,1
17		6.0	26	250	---	2.0		3,2
18		5.8	18	240	---	---		3,1
19		4.6	20	250				3,0
20		4.6	16	250				3,1
21		3.6	14	270				3,0
22		3.5	11	280				(2,9)
23		(3,3)	9	300				(2,8)

Time: 15.0°E.

Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 9

Nurmijarvi, Finland (60.5° N, 24.6° E)

March 1961

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	(3,0)	3	300					---
01	(2,9)	3	310					---
02	(2,9)	2	320					---
03	(2,6)	2	315					---
04	(1,9)	6	300					(2,90)
05	(2,0)	5	300					(3,05)
06	3.2	13	300					3,10
07	4.2	18	250			---		3,20
08	5.2	25	220		---	2,20		3,20
09	6.1	27	220		---	2,30		3,20
10	6.8	26	210		3,8	2,60		3,30
11	7.0	28	205		---	2,60		3,20
12	7.2	27	205		---	2,80		3,20
13	7.7	27	210		---	2,65		3,20
14	7.2	26	220		---	2,70		3,30
15	6.8	25	220		---	2,70		3,30
16	7.0	27	220		---	2,30		3,30
17	7.0	26	220		---	2,10		3,40
18	6.8	23	230		---	---		3,30
19	6.2	13	230		---	---		3,20
20	5.2	14	230		---	---		3,20
21	(5,8)	9	250		---	---		(3,20)
22	(3,0)	4	270		---	---		---
23	(3,0)	5	290		---	---		(2,90)

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 1 minute.

Table 11

Churchill, Canada (58.8° N, 94.2° W)

March 1961

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	3.3	22	280			---	4.5	---
01	3.4	26	285			---	4.0	---
02	3.2	16	290			---	4.0	---
03	3.6	18	330			2.0	4.0	---
04	3.4	20	315			2.2	3.2	---
05	3.8	19	355			2.7	4.0	---
06	3.9	14	300			2.1	4.0	---
07	---	4.0	22	305	---	2.0	4.0	(3,0)
08	---	4.0	23	300	---	2.9		3,1
09	305	5.2	26	270	3,9	3.0		3,0
10	330	5.7	28	225	4.1	3.0		3,0
11	325	6.0	30	230	4.2	3.0		3,0
12	330	6.2	29	220	4.2	3.1		3,0
13	330	6.6	28	220	4.2	3.0		3,0
14	320	6.7	30	220	4.2	2.9		3,0
15	300	7.0	31	230	4.0	2.9		3,0
16	290	6.5	31	240	---	2.6		3,0
17	(295)	6.1	31	260	---	2.4		3,0
18		5.8	30	270	---	2.0		3,0
19		5.0	27	270	---	2.0	3.0	3,0
20		4.2	26	300	---	2.2	3.6	---
21		4.4	25	305	---	2.2	4.5	---
22		3.8	22	290	---	---	5.6	---
23		4.2	22	280	---	---	5.5	---

Time: 90.0°W.

Sweep: 1.0 Mc to 17.0 Mc in 16 seconds.

Table 8

Lycksele, Sweden (64.6° N, 18.8° E)

March 1961

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	3.0	28	300				2,2	2,6
01	(3,0)	27	300				2,4	2,6
02	2.7	25	295				2,4	2,6
03	2.3	25	285				2,2	2,6
04	2.1	27	280				2,1	2,6
05	2.6	28	280				2,2	2,7
06	3.5	29	255		---	---	2,4	2,8
07	---	4.7	31	240	---	110	1,90	3,0
08	(300)	(5,6)	31	230	3,6	110	2,15	3,1
09	290	(6,1)	29	210	3,8	105	2,30	3,1
10	300	(6,4)	30	205	3,9	100	2,60	3,4
11	290	(6,6)	30	205	4,0	100	2,60	3,4
12	285	6,9	31	215	4,0	100	2,70	3,1
13	280	6,6	31	210	3,9	100	2,55	3,4
14	290	(6,7)	30	215	3,9	100	2,50	3,1
15	(260)	(6,6)	31	225	3,8	105	2,40	3,0
16	---	(6,6)	31	230	---	110	2,10	3,1
17		(6,0)	31	240	---	125	1,80	2,9
18		6,0	28	240	---	120	1,50	2,3
19		5,2	29	235				2,2
20		4,8	28	240				1,1
21		3,5	29	250				2,2
22		3,5	26	260				2,2
23		3,1	26	285				2,4

Time: 15.0°E.

Sweep: 0.3 Mc to 20.0 Mc in 3 minutes.

Table 10

Uppsala, Sweden (59.8° N, 17.6° E)

March 1961

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	2.7	25	280		---	---	2,3	2,7
01	2.4	26	295		---	---	2,3	2,7
02	(2,1)	29	280		---	---	2,4	(2,7)
03	(1,9)	29	275		---	---	2,4	(2,7)
04	(2,0)	29	275		---	---	2,4	(2,7)
05	2,2	28	270		---	120	1,20	3,1
06	3,4	30	245		---	110	1,60	2,6
07	---	5,0	30	235	---	110	1,95	3,3
08	---	5,8	30	215	---	105	2,30	3,7
09	(330)	6,6	30	210	4,0	105	2,50	4,0
10	295	6,6	31	210	4,2	105	2,70	4,0
11	305	7,0	31	205	4,1	100	2,80	4,0
12	290	7,3	31	205	4,3	100	2,90	4,2
13	(295)	7,2	31	210	4,2	100	2,85	3,2
14	(295)	7,1	31	210	4,0	100	2,70	3,5
15	---	7,1	31	220	---	100	2,55	4,0
16	---	7,2	31	230	---	105	2,35	3,3
17	6,9	31	235		(110)	2,00	3,1	3,2
18	6,7	31	235		(115)	1,50	2,4	3,2
19	6,0	31	230		---	---	2,3	3,1
20	5,2	30	230		---	---	2,2	3,1
21	4,4	26	240		---	---	2,2	3,0
22	3,4	27	255		---	---	2,2	2,8
23	3,2	26	265		---	---	2,2	2,7

Time: 15.0°E.

Sweep: 0.3 Mc to 20.0 Mc in 6 minutes, automatic operation.

Table 12

Inverness, Scotland (57.4° N, 4.2° W)

March 1961

Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00	3.0	27						2,70
01	>2,6	28						(2,65)
02	(2,3)	28						(2,60)
03	>2,2	27						2,65
04	>2,1	26						2,65
05	2,1	26						2,70
06	2,6	29						2,85
07	4,2	30						3,10
08	5,4	30						3,10
09	5,8	30						3,10
10	6,2	30						3,10
11	6,4	30						3,10
12	6,6	30						3,05
13	6,8	31						3,10
14	6,9	31						3,10
15	>7,0	31						3,10
16	6,9	31						3,05
17	6,8	31						3,05
18	>6,6	31						3,10
19	(6,3)	31						3,10
20	5,6	31						3,00
21	>4,3	30						2,95
22	3,5	27						2,80
23	>3,0	28						2,70

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.



Table 13

Oe Bilt, Holland (52.1° N, 5.2° E)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		3.4 30	310					2.75	
01		3.4 30	(310)					2.75	
02		3.4 31	(310)					2.75	
03		3.2 31	<310					2.80	
04		2.7 31	(300)					2.80	
05		2.4 31	<300					2.90	
06		3.9 31	260		---	1.9		3.20	
07	(260)	5.3 31	230	3.2	130	2.0		3.25	
08	290	5.9 31	225	3.8	120	2.4		3.20	
09	285	6.8 31	215	4.0	120	2.8	3.0	3.20	
10	290	7.2 30	220	4.0	118	2.9	3.0	3.20	
11	285	7.4 31	215	4.4	116	3.1		3.15	
12	280	7.7 31	220	4.4	112	3.2		3.20	
13	280	7.5 30	220	4.4	116	3.1		3.20	
14	280	7.5 31	225	4.1	118	3.0		3.15	
15	270	7.5 31	230	---	120	2.7		3.20	
16	---	7.5 31	240	---	122	2.4		3.20	
17	---	7.4 30	250		<150	2.0		3.20	
18		7.2 28	240		---	---		3.20	
19		6.6 20	240					3.15	
20		5.3 31	245					3.10	
21		4.4 31	260					3.00	
22		3.9 31	290					2.85	
23		3.7 31	300					2.75	

Time: 0.0°.

Sweep: 1.8 Mc to 18.0 Mc in 4 minutes.

Table 15

St. John's, Newfoundland (47.6° N, 52.7° W)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		(3.8) 23	290					(2.9)	
01		3.5 21	<300					2.8	
02		2.9 24	280					2.9	
03		2.7 24	<290					2.8	
04		2.4 22	260					3.0	
05		2.4 25	270					3.0	
06		3.8 31	250			2.00		3.2	
07		5.4 30	220			2.40		3.3	
08	(270)	6.0 31	210	---		2.70		3.2	
09	280	6.8 30	200	---		3.00		3.2	
10	285	7.0 31	200	4.2		3.10		3.2	
11	290	7.4 31	200	4.2		3.20		3.1	
12	285	7.9 31	205	4.2		3.30		3.1	
13	285	7.9 31	205	4.2		3.20		3.0	
14	275	7.8 31	210	---		3.00		3.1	
15	(285)	7.6 31	220	---		2.90		3.1	
16	---	7.5 31	230			2.60		3.0	
17		7.4 31	240			---		3.1	
18		7.1 31	235			---		3.0	
19		6.2 29	240			---		3.0	
20		(5.4) 27	250					(3.0)	
21		(4.7) 24	275					2.9	
22		(4.5) 21	290					---	
23		4.1 22	295					2.8	

Time: 60.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 17

Sottens, Switzerland (46.6° N, 6.7° E)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		3.9 31	280					2.8	
01		3.8 31	300					2.8	
02		3.7 31	300					2.7	
03		3.8 30	290					2.8	
04		3.7 31	280					2.8	
05		3.6 30	270					2.9	
06		3.0 30	260					3.0	
07		4.4 31	240					3.2	
08	(270)	5.6 31	230	3.4	120	2.2		3.3	
09	260	6.7 31	220	3.6	110	2.6		3.35	
10	260	7.0 30	200	4.1	100	2.9		3.2	
11	270	7.4 30	200	4.3	100	3.0		3.2	
12	280	7.9 30	200	4.4	100	3.1		3.3	
13	270	8.0 26	200	4.4	100	3.2		3.2	
14	270	8.2 25	220	4.6	100	3.1		3.2	
15	270	7.9 29	220	4.2	100	3.0		3.2	
16	260	7.8 30	230	3.9	110	2.8		3.2	
17	---	7.6 31	240	---	110	2.5		3.3	
18		7.7 31	240		120	1.9		3.3	
19		6.9 30	230					3.2	
20		6.3 30	230					3.2	
21		5.6 30	240					3.1	
22		4.2 29	250					3.0	
23		4.0 30	270					2.9	

Time: 15.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 14

Winnipeg, Canada (49.9° N, 97.4° W)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		3.0 28	<300					2.9	
01		2.8 27	305					(3.0)	
02		2.8 22	315					(2.8)	
03		2.8 19	<335					(2.8)	
04		3.0 15	300					---	
05		3.0 15	310					---	
06		3.0 15	285					(3.0)	
07	---	3.6 23	250			2.0		3.2	
08	---	4.9 24	230			2.4		3.2	
09	295	5.5 27	220	4.0		2.6		3.1	
10	310	5.8 30	210	4.2		2.9		3.1	
11	325	6.4 30	210	4.3		3.0		3.0	
12	320	6.9 27	200	4.4		3.1		3.0	
13	300	7.0 29	210	4.4		3.1		3.0	
14	300	7.2 30	215	4.2		3.1		3.0	
15	290	7.0 30	215	4.2		3.0		3.1	
16	275	7.1 30	220	3.9		2.7		3.1	
17	270	7.0 30	240			2.5		3.15	
18		6.9 30	240			2.0		3.1	
19		6.3 29	230			---		3.1	
20		5.6 29	235					3.0	
21		4.4 30	250					3.1	
22		3.8 29	260					3.0	
23		3.2 30	270			---		3.0	

Time: 90.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 15 seconds.

Table 16

Graz, Austria (47.1° N, 15.5° E)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	fEs	(M3000)F2	
00		>3.4 30	325						
01		(3.6) 31	330						
02		>3.5 30	320						
03		(3.6) 28	320						
04		>3.4 28	315						
05		3.4 27	295						
06		3.5 31	275						
07		>5.6 31	240						
08		6.6 29	240			(2.6)			
09	280	(7.1) 27	230		(4.1)	---			
10	305	7.9 27	225		4.2	3.0			
11	290	8.2 31	<240		(4.6)	(3.2)			
12	290	8.4 28	<250		(4.5)	---			
13	280	8.5 29	<250			---			
14	280	8.4 30	<250			(3.1)			
15	280	8.2 31	230			(3.0)			
16		8.2 30	240						
17		(7.8) 27	250						
18		>6.7 31	240						
19		>5.7 30	240						
20		>5.7 29	250						
21		(5.1) 28							
22		>3.5 26	280						
23		>3.3 30	300						

Time: Local.

Sweep: 2.0 Mc to 18.0 Mc in 50 seconds.

Table 18

Ottawa, Canada (45.4° N, 75.9° W)							March 1961	
Time	h'F2	foF2→Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		3.7 30	285					---
01		3.2 30	300					---
02		3.0 29	300					---
03		3.0 27	300					---
04		2.8 27	315					---
05		2.4 26	305					---
06		3.0 29	290			1.7		---
07	---	4.8 30	250			2.0		3.3
08	(260)	5.8 30	230	---		2.6		3.3
09	300	6.3 31	210	(4.0)		2.9		3.2
10	290	6.0 31	200	(4.2)		3.0		3.2
11	300	7.2 31	200	4.4		3.1		3.1
12	300	7.8 31	205	4.5		3.2		3.1
13	290	7.6 31	210	(4.5)		3.2		3.1
14	300	7.6 31	210	(4.5)		3.0		3.1
15	290	7.3 31	215	(4.2)		3.0		3.1
16	275	7.3 31	230	(3.8)		2.8		3.1
17	(260)	7.2 31	250			2.3		3.2
18		7.0 31	240			1.8		3.1
19		6.5 31	235					3.1
20		5.8 30	250					3.0
21		5.1 29	250					3.0
22		4.5 30	270					(2.9)
23		4.2 30	290					(2.9)

Table 19

Wakkanai, Japan (45.4° N, 141.7° E)									March 1961
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.6 30	305					2.80	
01		4.5 29	300					2.80	
02		4.4 29	285					2.85	
03		4.4 29	280					2.90	
04		4.3 29	260					2.95	
05		4.0 30	260					2.95	
06		5.3 31	240			----		3.25	
07		7.1 31	235			2.30		3.35	
08		8.0 31	235			2.60		3.25	
09	(265)	8.8 30	220			3.00		3.20	
10	260	9.4 30	220	4.2		3.10		3.20	
11	265	9.7 30	215	4.4		3.20		3.15	
12	(265)	9.8 29	225	4.5		3.20		3.20	
13	270	9.3 29	230	4.3		3.20		3.20	
14	(265)	9.0 29	235	----		3.10		3.20	
15	----	8.6 30	240	----		2.90		3.25	
16		8.4 30	240			2.35		3.25	
17		8.3 29	230			----		3.35	
18		7.1 29	230			3.20		3.10	
19		6.0 29	245			3.00		2.95	
20		5.4 28	260			2.85		2.80	
21		5.1 29	275						
22		4.7 29	300						
23		4.7 29	300						

Time: 135.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 1 minute.

Table 21

Akita, Japan (39.7° N, 140.1° E)									March 1961
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.7 27	290					2.80	
01		4.6 28	290					2.80	
02		4.6 29	275					2.85	
03		4.5 29	255					2.95	
04		4.2 29	255					2.95	
05		4.1 29	260					2.95	
06		5.3 29	245			1.80		3.20	
07		7.2 29	245			2.25		3.45	
08	245	8.6 30	240	----		2.80		3.35	
09	250	9.1 30	220	----		3.05		3.25	
10	250	9.5 29	210	----		3.20	3.4	3.20	
11	270	10.2 30	210	----		3.30		3.10	
12	270	10.4 30	215	----		3.45		3.15	
13	265	10.2 30	225	----		3.40		3.20	
14	260	9.7 30	225	----		3.25		3.20	
15	255	9.2 28	240	----		3.00		3.20	
16	(250)	9.0 28	245	----		2.60		3.25	
17		8.3 28	245			2.05	2.1	3.30	
18		7.6 28	230					3.30	
19		6.2 28	225					3.10	
20		5.4 28	245					2.95	
21		5.0 27	260					2.90	
22		5.0 27	280					2.80	
23		4.9 27	290					2.80	

Time: 135.0°E.

Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 23

Yamagawa, Japan (31.2° N, 130.6° E)									March 1961
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.8 25	300					2.80	
01		4.8 25	300					2.80	
02		4.7 27	290					2.90	
03		4.5 28	255					3.05	
04		4.0 27	240					3.15	
05		3.4 27	260					2.95	
06		3.6 27	290					2.90	
07		6.1 27	240			2.10		3.40	
08		8.0 28	240			2.60		3.40	
09	----	8.6 30	225			3.00		3.30	
10	(270)	9.5 31	215			3.25	3.3	3.10	
11	290	10.9 31	220	----		3.40	3.6	3.10	
12	290	11.4 31	220	----		3.50		3.05	
13	290	12.1 30	235	5.1		3.50	3.7	3.05	
14	285	12.3 30	<235	5.0		3.40	3.6	3.10	
15	270	11.6 31	230	----		3.30		3.15	
16	(260)	10.8 31	235			3.00	3.1	3.15	
17		10.5 31	240			2.55	2.8	3.25	
18		9.4 30	240			1.95	2.3	3.30	
19	(7.5)	31	230					(3.15)	
20	(6.4)	30	230					(3.00)	
21	5.5	26	255					2.95	
22	5.2	25	280					2.90	
23	4.9	25	290					2.85	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 30 seconds.

Table 20

Rome, Italy (41.8° N, 12.5° E)									March 1961
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.4 28	300					2.75	
01		4.3 29	300					2.70	
02		4.3 29	300					2.70	
03		4.2 30	300					2.75	
04		4.0 30	280					2.80	
05		4.0 30	270					2.90	
06		3.8 30	250		----	----		3.05	
07	----	5.8 27	240	----	140	1.9		3.35	
08	----	6.7 27	240	----	110	2.4		3.25	
09	----	7.6 28	220	----	110	2.9		3.20	
10	----	8.0 26	210	----	110	3.1	3.1	3.15	
11	----	8.9 27	210	----	110	3.3		3.10	
12	----	9.0 28	210	----	110	3.3		3.00	
13	----	9.2 29	220	----	110	3.3		3.05	
14	----	9.2 30	220	----	110	3.3		3.15	
15		8.8 30	230			110	3.1	3.10	
16		8.6 29	240			110	2.8	3.15	
17	(8.4)	25	240			120	2.3	3.20	
18	(8.0)	24	250			130	1.8	3.15	
19	(7.3)	24	230					3.10	
20	(5.8)	21	240					2.95	
21	5.2	26	250					(2.95)	
22	4.8	25	260					2.90	
23	4.6	26	280					2.80	

Time: 15.0°E.

Sweep: 1.4 Mc to 15.0 Mc in 5 minutes, automatic operation.

Table 22

Tokyo, Japan (35.7° N, 139.5° E)									March 1961
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		4.6 30	300					2.75	
01		4.6 30	300					2.80	
02		4.6 30	285					2.85	
03		4.4 29	255					2.95	
04		4.1 29	255					2.90	
05		4.0 29	290					2.80	
06	----	5.1 29	240			1.85		3.15	
07	----	7.4 28	230			(2.30)		3.30	
08	240	8.4 28	225			2.80		3.30	
09	255	9.0 30	225	(4.5)		3.10		3.20	
10	260	9.6 31	210	----		3.30		3.10	
11	270	10.5 31	215	----		(3.45)	3.4	3.10	
12	275	10.9 31	210	4.8		3.50		3.10	
13	275	10.9 31	230	(5.0)		(3.40)		3.10	
14	260	10.1 31	225	(4.4)		3.30		3.10	
15	260	10.0 31	230	----		3.10	3.1	3.15	
16	250	9.2 31	245			2.80		3.20	
17		8.8 30	240			(2.30)		3.25	
18		8.0 30	230					3.25	
19		6.0 31	240					3.05	
20		5.1 30	255					2.85	
21		5.0 30	290					2.80	
22		4.8 30	295					2.80	
23		4.7 30	300					2.75	

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 24

Formosa, China (25.0° N, 121.5° E)									March 1961
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		7.0 31	280					2.80	
01		6.5 29	260					2.85	
02		6.3 31	250					3.00	
03		5.3 31	225					3.30	
04		3.9 31	230					3.10	
05		3.2 31	250					3.00	
06		4.3 31	260					3.10	
07	----	7.3 31	235			----		3.40	
08	----	8.5 31	230			(115) (2.95)		3.25	
09	(270)	9.2 31	220	----		(111) (3.20)		3.15	
10	(280)	(10.4) 31	220	----		111		(3.00)	
11	305	12.4 31	210	(5.00)	111	----		2.90	
12	310	14.1 31	(210)	----	(111)	----	3.9	2.95	
13	300	15.1 31	220	(4.90)	(111)	----		2.95	
14	290	>15.0 31	220	----	(111)	----		(3.05)	
15	280	15.1 31	220	----	<113 (3.25)	3.5		3.10	
16	260	>14.7 31	250	----	113 (2.90)	3.1		3.15	
17	(255)	14.7 31	240			----	2.8	(3.10)	
18		13.8 31	235			----		(3.10)	
19		13.3 31	230			----		3.10	
20		>12.0 31	220			----		(3.00)	
21		9.3 31	230					(2.95)	
22		>7.9 29	250					2.95	
23		7.9 31	260					2.90	

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 25

El Cerillo, Mexico (19.3° N, 99.5° W)										March 1961	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00	4.6	31	260					3.10			
01	4.7	31	250					3.10			
02	4.4	31	240					3.20			
03	3.6	31	240					3.10			
04	3.4	31	250					3.00			
05	3.3	31	280					2.90			
06	3.2	30	280					2.90			
07	5.2	31	240		127	1.90		3.20			
08	7.4	31	230		109	2.30		3.40			
09	8.4	30	210		103	2.90		3.20			
10	9.4	30	210		103	3.30		3.10			
11	(290)	10.4	30	210	4.9	105	3.50	3.10			
12	(290)	10.8	30	200	4.9	103	3.70	3.00			
13	285	11.4	30	210	4.9	103	3.70	3.10			
14	(280)	11.9	30	215	5.0	105	3.60	3.10			
15	---	11.4	30	220	---	103	3.55	3.9			
16	---	11.0	30	230	---	103	3.30	4.0			
17	---	10.4	30	230	---	103	2.85	3.8			
18	---	9.4	30	230	---	109	2.15	3.4			
19	---	8.2	28	220	---	---	---	3.3			
20	---	6.6	30	220	---	---	---	3.0			
21	---	5.4	30	230	---	---	---	2.2			
22	---	4.8	29	250	---	---	---	2.90			
23	---	4.8	30	270	---	---	---	2.90			

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 27

Singapore, British Malaya (1.3° N, 103.8° E)										March 1961	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00	9.6	22	200		---	---		3.15			
01	7.2	24	230		125	---		3.00			
02	6.9	25	240		125	---		3.05			
03	6.1	25	235		140	---		3.20			
04	5.2	27	235		---	---		3.30			
05	4.1	27	235		---	---		3.40			
06	---	4.1	26	250	---	120	1.25	3.15			
07	---	7.6	27	240	---	120	2.20	2.4			
08	---	9.0	27	230	---	110	2.90	3.1			
09	290	9.8	29	210	4.5	105	3.30	3.4			
10	330	10.3	25	200	4.9	105	3.60	2.60			
11	340	11.0	20	200	4.9	105	3.80	2.15			
12	340	10.7	24	200	5.0	105	3.85	2.20			
13	320	11.0	28	200	4.9	105	3.80	2.30			
14	300	11.0	27	200	4.8	105	3.70	2.30			
15	305	11.5	28	200	4.5	105	3.45	2.40			
16	240	11.6	28	205	---	110	3.10	2.55			
17	240	11.8	27	240	---	110	2.50	2.55			
18	---	12.0	26	260	---	110	---	2.50			
19	---	11.7	24	305	---	---	---	2.45			
20	---	11.8	19	315	---	---	---	2.50			
21	---	12.1	17	255	---	---	---	2.85			
22	---	12.2	16	220	---	---	---	3.10			
23	---	11.6	19	205	---	---	---	3.25			

Time: 105.0°E.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 29

Townsville, Australia (19.3° S, 146.7° E)										March 1961	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00	(6.3)	19	270				1.8	(2.90)			
01	>6.0	21	250					3.00			
02	6.1	22	250					3.00			
03	>5.0	21	245					3.10			
04	>4.5	27	250					3.00			
05	4.0	27	255					2.95			
06	4.2	28	260					3.05			
07	>6.5	20	240			2.30		3.25			
08	7.2	21	230			2.80	3.0	3.30			
09	8.4	21	220	---		3.15	3.4	3.30			
10	8.5	23	205	4.6		3.40	3.7	3.05			
11	8.9	18	200	4.9		3.55	3.8	3.10			
12	(11.0)	17	200	4.8		3.65	3.8	3.05			
13	>11.0	22	210	4.8		3.60	4.1	3.10			
14	>11.0	22	210	4.8		3.55	4.1	3.10			
15	(11.0)	23	230	---		3.45	4.0	---			
16	>10.5	7	240	---		3.10	3.6	---			
17	>8.4	11	250	---		2.70	3.8	---			
18	>8.0	9	250	---		1.75	3.6	---			
19	>7.0	16	240	---		---	2.6	---			
20	>6.6	16	250	---		---	2.2	(2.80)			
21	>6.8	20	280	---		---	2.2	(2.85)			
22	(6.8)	21	290	---		---	2.0	(2.90)			
23	>6.5	17	290	---		---	---	---			

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 26

Baguio, P. I. (16.4° N, 120.6° E)										March 1961	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00	(9.8)	26	255					(3.15)			
01	>9.5	30	245					(3.20)			
02	9.1	29	230					(3.40)			
03	5.6	29	225					(3.30)			
04	>4.0	29	240					(3.20)			
05	(3.3)	28	260					(3.10)			
06	4.2	30	280					3.00			
07	7.5	31	260					3.15			
08	9.1	31	245					3.00			
09	---	>10.0	30	<240	---			(2.70)			
10	(310)	>10.4	27	225	---			(2.60)			
11	(330)	>10.4	28	(220)	---			(2.50)			
12	(330)	10.4	29	220	---			(2.40)			
13	(325)	(10.8)	29	215	---			(2.55)			
14	---	(11.3)	27	(225)	---			(2.60)			
15	(320)	>12.0	27	<240	---			(2.85)			
16	(300)	>12.0	30	245	---			(2.80)			
17	>11.9	30	260		<128	(2.35)	2.8	(2.75)			
18	>11.0	31	280		---	---	---	(2.80)			
19	>11.0	29	310		---	---	---	(2.70)			
20	(10.6)	21	290		---	---	---	(2.85)			
21	>10.1	20	260		---	---	---	(2.95)			
22	>10.0	23	255		---	---	---	(2.95)			
23	(10.3)	25	260		---	---	---	(3.10)			

Time: 120.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 28

Huancayo, Peru (12.0° S, 75.3° W)										March 1961	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2			
00	9.1	12	225					3.20			
01	7.7	15	220					3.30			
02	6.0	19	225					3.30			
03	4.85	20	230					3.35			
04	4.1	25	240					3.30			
05	3.1	23	255					3.30			
06	4.2	25	265					2.95			
07	7.85	30	240					3.25			
08	9.5	31	225					2.90			
09	---	10.0	31	215	---			2.55			
10	(320)	9.5	31	205	---			2.50			
11	(315)	9.4	31	200	4.9	---		2.50			
12	325	9.4	31	200	4.9	---		2.50			
13	320	10.1	31	200	---			2.50			
14	---	10.7	29	200	---			2.55			
15	---	11.0	30	200	---			2.55			
16	---	11.0	29	210	---			2.55			
17	---	10.9	29	235	---			2.50			
18	---	10.6	29	265	---			2.45			
19	>9.5	27	315		<143	1.75	4.5	2.50			
20	8.8	12	<325		---	---	---	2.45			
21	9.05	12	(260)		---	---	---	(2.70)			
22	(9.9)	8	245		---	---	---	---			
23	10.0	13	240		---	---	---	3.05			

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Johannesburg, Union of S. Africa (26.1° S, 28.1° E)								March 1961	
Time	h'F2	fof2—Count	h'F	fof1	h'E	foE	foEs	(M3000)F2	
00		4.1	31	---			<1.5	2.95	
01		3.9	31	---			<1.4	2.90	
02		3.9	31	---			<1.4	3.05	
03		3.4	31	---			1.1	2.95	
04		3.2	31	---			1.0	2.90	
05		3.1	31	---			1.1	2.90	
06		4.0	30	250		<1.4		3.00	
07	---	6.6	31	230		2.2		3.30	
08	250	7.8	31	225		2.8		3.20	
09	265	8.8	31	215	---	3.2	3.3	3.10	
10	280	9.0	30	210	4.8	3.4	3.7	3.00	
11	295	9.6	30	200	5.0	3.5	3.9	2.85	
12	295	10.1	30	200	5.0	3.7	3.9	2.90	
13	300	10.4	30	205	5.0	3.7	4.0	2.85	
14	290	10.6	30	210	4.8	3.6	4.0	2.90	
15	285	10.6	30	220	---	3.4	3.7	2.90	
16	270	10.2	31	220		3.1	3.6	2.95	
17	250	9.7	31	240		2.7	3.0	3.00	
18		9.3	31	235		2.0	2.2	3.10	
19		(8.2)	31	225			1.7	(3.10)	
20		6.4	31	225			<1.6	3.15	
21		5.6	31	230			<1.5	3.00	
22		5.0	31	(235)			<1.5	3.00	
23		4.5	31	---			<1.4	2.90	

Table 31

Capetown, Union of S. Africa (34.1° S, 18.3° E)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.4 30	---				<1.6	2.95	
01		3.4 30	---				<1.6	2.90	
02		3.5 30	---				<1.6	2.85	
03		3.7 30	---				<1.6	2.85	
04		3.6 30	---				<1.5	2.95	
05		3.4 30	---				<1.4	2.95	
06		3.1 30	---				<1.5	2.95	
07		4.9 30	240			1.8		3.25	
08	---	6.7 30	240			2.4		3.30	
09	250	7.7 31	230			2.9		3.25	
10	285	8.6 31	220	4.5		3.1	3.4	3.00	
11	295	9.4 30	205	---		3.3	3.7	2.90	
12	305	9.7 30	210	---		3.4	3.8	2.85	
13	300	10.1 30	(200)	---		3.5	3.9	2.85	
14	300	10.5 29	220	4.0		3.4	3.0	2.85	
15	295	10.6 30	220	---		3.4	3.6	2.90	
16	280	10.2 30	225	---		3.2	3.3	2.95	
17	265	9.4 30	235			2.9	3.0	3.00	
18	250	9.2 30	240			2.4	2.4	3.15	
19		8.0 30	230			<1.8	<1.0	3.20	
20		6.5 30	225				<1.7	3.20	
21		5.4 30	---				<1.7	3.10	
22		4.7 30	---				<1.6	3.15	
23		4.0 30	---				<1.6	3.10	

Time: 30.0°E.

Sweep: 1.0 Mc to 17.0 Mc in 7 seconds.

Table 33

De Bilt, Holland (52.1° N, 5.2° E)									
February 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.2 28	(300)					2.75	
01		3.2 28	(300)					2.80	
02		3.0 28	(300)					2.00	
03		2.7 28	(300)					2.00	
04		2.5 27	(300)					2.90	
05		2.3 28	<300					3.05	
06		2.4 28	<290					3.05	
07		4.4 28	235			1.9		3.20	
08	(230)	6.0 27	230	---	---	2.0		3.35	
09	230	6.8 26	225	---	120	2.3		3.30	
10	240	7.4 28	220	3.0	119	2.7		3.35	
11	245	7.8 28	220	---	120	2.9		3.30	
12	240	8.1 20	220	3.9	120	2.9		3.30	
13	245	8.0 28	215	---	120	2.8		3.30	
14	240	0.0 28	230	---	121	2.6		3.30	
15	230	7.7 27	230		127	2.3		3.30	
16	---	7.0 24	220		---	2.0		3.30	
17		6.4 28	225		---	1.9		3.20	
18		5.5 28	230					3.15	
19		4.8 28	240					3.05	
20		4.1 28	260					3.00	
21		3.7 27	200					2.90	
22		3.4 28	(290)					2.85	
23		3.3 28	<300					2.05	

Time: 0.0°.

Sweep: 1.8 Mc to 18.0 Mc in 40 seconds.

Table 35

Talara, Peru (4.6° S, 81.3° W)									
February 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		9.8 18	230				4.3	3.15	
01		8.5 21	220				4.0	3.25	
02		6.25 22	220				3.7	3.40	
03		4.6 21	225				3.6	3.40	
04		3.4 21	240				2.8	3.28	
05		2.55 20	(250)				2.2	3.25	
06		2.5 20	(260)				2.2	3.20	
07		6.3 23	250			125	2.10	3.30	
08		8.6 25	235			115	2.75	3.3	
09	---	9.85 24	220			111	3.20	3.4	
10	---	10.65 26	210			111	3.50	4.4	
11	(325)	10.95 26	200	4.8	111	3.70	5.5	2.55	
12	(320)	11.4 26	200	(5.0)	111	3.80	4.5	2.42	
13	(335)	11.6 27	200	5.0	111	3.80	4.4	2.25	
14	<320	>11.8 27	200	(5.0)	111	3.70	4.5	2.42	
15		12.0 27	200		109	3.58	4.5	2.58	
16		12.0 27	(210)		111	3.35	4.5	2.68	
17		12.2 27	<230		115	2.82	3.8	2.65	
18		11.9 27	250		<125	2.25		2.65	
19		12.05 26	260				4.0	2.80	
20		11.8 26	280				2.9	2.80	
21		>11.7 23	260				1.9	2.95	
22		11.6 15	245				3.2	3.10	
23		11.25 16	225				4.0	3.15	

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 32

Christchurch, New Zealand (43.6° S, 172.8° E)									
March 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		(5.4) 19	260				<1.7	(2.65)	
01		(5.2) 20	(270)				<1.7	(2.70)	
02		(4.9) 24	260				<1.7	(2.70)	
03		(4.6) 26	260				<1.8	(2.70)	
04		(4.0) 24	260				<1.7	2.85	
05		3.4 24	(260)				<1.7	2.80	
06		3.4 21	260				<1.7	2.90	
07	---	(4.8) 26	240		115	1.8		(3.15)	
08	---	5.7 26	240	---	105	2.5	2.9	3.20	
09	300	6.4 27	220	---	105	2.9	3.2	3.15	
10	280	6.8 26	210	---	105	3.2	3.4	3.10	
11	300	7.2 28	200	4.5	105	(3.3)	3.6	3.10	
12	280	(7.4) 28	200	4.8	105	3.4	3.6	(3.10)	
13	300	7.6 29	210	---	100	3.4	3.5	3.10	
14	280	7.8 27	210	(4.5)	100	3.4		3.10	
15	(280)	7.6 27	220	---	105	3.2		3.10	
16	---	7.4 28	230		105	3.0		3.05	
17		(7.3) 25	230		105	2.7		3.05	
18		(7.4) 18	240		110	2.2		(3.10)	
19		(7.4) 14	240		---	---	<1.7	(2.95)	
20		(7.2) 18	240				<1.7	(2.75)	
21		(6.8) 22	260				<1.8	(2.80)	
22		(6.2) 15	260				2.2	(2.70)	
23		(5.5) 17	270				2.2	(2.65)	

Time: 180.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 34

Dourbes, Belgium (50.1° N, 4.6° E)									
February 1961									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		3.4 25	280				<1.1	2.85	
01		3.3 25	275					2.80	
02		3.4 26	260				1.2	2.80	
03		3.2 26	270					2.85	
04		2.6 25	260					2.85	
05		2.5 24	250				<1.1	2.95	
06		2.5 26	250				<1.1	3.05	
07		4.5 24	235					3.35	
08	---	6.3 25	225	---	(121)	<1.50		3.55	
09	---	7.0 26	220	---	113	2.45		3.50	
10	240	7.4 23	220	---	113	2.70		3.50	
11	245	7.9 25	220	---	113	2.80		3.40	
12	250	8.2 26	220	3.90	(115)	2.85		3.35	
13	255	0.0 25	220	---	113	2.80		3.35	
14	(255)	0.1 26	230	---	115	2.60		3.30	
15	---	0.0 23	230		115	2.35		3.40	
16		7.3 25	225		<126	1.95		3.55	
17		6.2 26	220		<141	<1.40	<1.5	3.30	
18		5.6 26	220				1.3	3.20	
19		5.0 24	230				<1.2	3.20	
20		3.9 24	250				1.5	3.05	
21		3.6 24	260				<1.5	2.95	
22		3.5 25	280				<1.4	2.85	
23		3.5 25	280				<1.4	2.90	

Time: 0.0°.

Sweep: 1.0 Mc to 20.0 Mc in 3 minutes.

Table 36

Christchurch, New Zealand (43.6° S, 172.8° E)							February 1961	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.7)	18	270			<1.7	(2.65)
01		(5.4)	17	(270)			<1.7	(2.65)
02		5.0	18	270			<1.7	2.60
03		(4.6)	18	(260)			2.0	(2.65)
04		4.0	20	(260)			<1.7	(2.65)
05		3.9	18	260			<1.7	2.80
06	---	(4.3)	21	250	---	110	1.7	2.2
07	---	(5.2)	26	240	---	110	2.4	2.9
08	(290)	5.8	25	230	---	105	2.8	3.2
09	290	(6.0)	24	220	(4.3)	105	3.1	3.4
10	310	6.6	24	220	4.5	105	3.3	3.6
11	310	7.3	23	210	4.7	105	(3.5)	3.9
12	310	7.3	23	200	4.9	100	3.6	3.8
13	330	7.3	24	200	4.8	105	3.7	3.8
14	330	7.2	23	200	4.8	105	3.7	3.7
15	320	7.2	20	220	(4.7)	105	3.5	2.90
16	330	6.8	18	220	(4.5)	105	3.2	3.2
17	(300)	7.0	19	230	---	105	2.9	2.9
18	---	7.1	17	240		110	2.6	2.6
19		(7.3)	15	250		120	1.9	2.3
20		(7.6)	20	240	---	---	2.2	(2.85)
21		(7.3)	19	250			2.2	(2.75)
22		(6.4)	14	260			2.0	(2.70)
23		(6.0)	19	<280			<1.7	(2.60)

Table 37

El Cerillo, Mexico (19.3° N, 99.5° W)									
January 1961									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	3.5	31	270				1.8	3.10	
01	3.9	31	240					3.30	
02	3.8	31	225				1.8	3.40	
03	3.0	30	230				1.9	3.35	
04	2.6	30	270				2.4	2.90	
05	2.6	29	300				1.8	2.90	
06	2.7	29	310					2.90	
07	3.7	31	260				2.0	3.10	
08	7.0	31	225		121	2.20	2.5	3.50	
09	8.8	30	220		106	2.80	3.0	3.40	
10	9.8	31	210		103	3.10	3.6	3.40	
11	9.5	30	200		102	3.40	3.6	3.30	
12	9.9	30	200		103	3.60	4.0	3.10	
13	10.4	30	200		103	3.60	4.0	3.05	
14	10.8	31	230		101	3.60	3.9	3.10	
15	10.2	31	225		101	3.40	4.0	3.20	
16	9.6	31	230		101	3.10	4.3	3.20	
17	9.2	31	230		103	2.50	4.0	3.30	
18	8.4	30	210		---	---	3.5	3.50	
19	5.0	30	200				3.0	3.40	
20	4.0	27	230				2.9	3.20	
21	4.0	29	250				2.4	3.20	
22	3.8	30	240				2.5	3.15	
23	3.5	31	260					3.10	

Time: 90.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 18 seconds.

Table 39

Inverness, Scotland (57.4° N, 4.2° W)									
December 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>2.3	16						(2.55)	
01	>2.2	19						2.60	
02	2.2	24						2.50	
03	2.3	25						2.55	
04	2.3	25						2.65	
05	>2.2	27						2.75	
06	>2.3	26						(2.85)	
07	>2.2	25						(2.80)	
08	(3.1)	31						(3.00)	
09	5.3	31						3.00	
10	6.9	30						3.20	
11	8.3	30						3.20	
12	8.8	30						3.20	
13	8.8	30						3.20	
14	9.0	31						3.20	
15	8.3	31						3.20	
16	7.3	31						3.20	
17	5.5	29						3.10	
18	4.0	28						3.00	
19	3.0	23						2.90	
20	2.9	18						2.85	
21	>2.4	15						(2.80)	
22	(2.3)	15						(2.60)	
23	(2.3)	13						(2.55)	

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 41

Moscow, U.S.S.R. (55.5° N, 37.3° E)									
March 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	4.5	31	295				<1.3	2.60	
01	4.4	31	300				<1.2	2.60	
02	4.1	31	295					2.60	
03	3.9	31	295					2.60	
04	3.7	31	280					2.65	
05	3.6	31	275			1.20		2.80	
06	4.9	31	255			1.65		3.00	
07	---	6.4	31	240		2.30		3.10	
08	(250)	7.7	31	235		2.60		3.05	
09	260	8.9	30	225	(4.5)	3.00		3.05	
10	260	9.7	31	220	(4.4)	3.10	3.1	3.00	
11	260	10.3	31	220	(4.2)	3.10		3.00	
12	270	10.5	31	220	4.6	3.20		3.00	
13	255	10.7	31	220	---	3.10		2.95	
14	250	10.5	31	230	---	3.00		3.00	
15	(250)	10.3	31	235	---	2.80		3.05	
16	9.6	31	235			2.40		3.10	
17	9.0	31	230			1.90		3.05	
18	8.4	31	230			1.30		3.00	
19	7.6	31	235			E		2.95	
20	6.6	31	240			---	<1.2	2.90	
21	5.8	30	250			---	<1.2	2.80	
22	5.2	30	270			---	<1.3	2.70	
23	4.8	30	290			---	<1.3	2.70	

Time: 30.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 38

Talara, Peru (4.6° S, 81.3° W)									
January 1961									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	7.4	10	235				4.3	3.30	
01	6.7	19	235				4.0	3.30	
02	5.05	20	245				3.4	3.22	
03	4.2	19	250				3.6	3.35	
04	3.6	19	250				2.1	3.35	
05	3.4	20	(250)				3.0	3.30	
06	3.1	22	<275				3.6	2.95	
07	6.7	22	255		129	2.15	3.4	3.18	
08	9.3	27	230		115	2.82	4.5	3.10	
09	10.5	30	215		113	3.25	4.4	2.90	
10	10.7	31	200	---	111	3.58	4.3	2.68	
11	10.95	30	200	---	109	3.75	5.4	2.48	
12	360	11.35	30	195	4.8	109	3.85	4.0	2.40
13	(330)	11.5	30	200	4.8	110	3.85	4.6	2.40
14	(340)	11.6	29	200	---	109	3.80	5.2	2.50
15	(325)	11.8	29	(205)	---	109	3.55	4.8	2.60
16	---	12.0	29	<225		111	3.25	4.6	2.70
17	---	11.7	29	<240		117	2.90	4.1	2.70
18	---	11.9	29	255		125	2.35	3.9	2.75
19	---	12.0	29	265				2.8	2.90
20	---	>11.9	29	270				1.8	3.02
21	---	>11.5	25	260					3.10
22	---	10.6	17	<245				2.4	(3.25)
23	---	8.8	15	235				3.5	3.10

Time: 75.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 40

Godhavn, Greenland (69.3° N, 53.5° W)									
March 1960									
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(4.45)	18						(2.80)	
01	(3.75)	16						(2.72)	
02	(4.0)	13						(2.85)	
03	(3.6)	17						(2.78)	
04	(3.3)	11						---	
05	(3.3)	8					2.5	---	
06	(3.5)	13						(2.85)	
07	(4.1)	12			119	---	3.5	---	
08	(5.0)	11			<118	---		(2.98)	
09	(5.5)	9			115	---		(3.00)	
10	(6.4)	15			<115	2.70		(2.90)	
11	(7.65)	16			<113	2.70		2.80	
12	(7.3)	18			(111)	2.90		(2.90)	
13	(6.7)	17			(111)	3.00		(2.90)	
14	(7.0)	16			111	2.80		(3.00)	
15	(6.5)	19			110	2.70		(3.02)	
16	(6.5)	22			<115	2.50		(3.00)	
17	(6.4)	24			119	2.40	3.4	(3.00)	
18	(6.2)	23			---	---	3.0	(3.02)	
19	(5.5)	19			---	---		(2.90)	
20	(5.6)	18			---	---		(2.90)	
21	(5.6)	20			---	---		(2.82)	
22	(5.2)	19			---	---		(2.82)	
23	(4.4)	18			---	---		(2.75)	

Time: 45.0°W.

Sweep: 1.6 Mc to 20.0 Mc in 18 seconds.

Table 42

Lindau/Harz, Germany (51.6° N, 10.1° E)								March 1960
Time	h'F2	foF2-Count	h'F	foF1	h'E	foE	fEs	(M3000)F2
00		5.26	30	295				2.58
01		5.04	31	295				2.55
02		4.82	31	293				2.56
03		4.60	31	298				2.57
04		4.50	29	294				2.58
05		4.20	25	280				2.65
06		3.94	29	270				2.80
07		5.52	31	251		---	E	2.98
08		6.95	31	236		110	2.50	3.05
09	---	6.39	31	228	----	107	2.88	3.02
10	(340)	8.94	30	224	4.40	104	3.17	3.7
11	(350)	9.38	30	217	4.70	104	3.32	4.1
12	---	9.89	30	220	----	104	3.38	3.9
13	---	10.52	31	218	----	104	3.38	3.6
14	---	10.28	31	228	----	104	3.28	
15	---	10.40	31	228	----	108	3.14	
16		9.87	31	232		106	2.86	
17		9.70	29	238		107	2.50	
18		9.15	31	236		---	1.98	
19		8.70	31	233		---	E	
20		7.75	31	235		---	----	
21		6.51	30	240		---	----	
22		5.73	30	258				
23		5.34	30	274				



Table 43

Dourbes, Belgium (50.1° N, 4.6° E)									
March 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.0 29	300					<1.2	2.65
01		4.8 30	290						2.65
02		4.6 27	280						2.65
03		4.4 30	300						<1.1
04		4.1 30	300						<1.3
05		3.7 30	280						<1.6
06	---	4.6 29	265		(121)	<1.60			<1.6
07	---	6.2 29	240	----	113	2.20			3.25
08	---	7.5 29	230	----	108	2.70			3.10
09	(330)	8.4 29	230	----	107	3.00			3.05
10	335	9.2 29	220	4.60	107	3.10			3.05
11	(330)	9.2 28	215	----	107	3.25			3.05
12	(310)	9.8 29	220	4.70	107	3.25			3.05
13	---	9.9 29	220		(109)	3.25			3.05
14	---	9.8 28	230		109	3.15			3.05
15	---	9.4 28	230		111	3.00			3.05
16	---	9.4 31	240		111	2.60			3.05
17	---	9.4 31	240		<119	2.05			3.05
18		8.6 30	240		---	<1.60			3.05
19		7.8 28	235						2.95
20		6.8 29	235						<1.6
21		5.8 29	250						<1.6
22		5.3 30	275						2.75
23		5.2 29	295						<1.6

Time: 0.0°.

Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 44

Pruhonice, Czechoslovakia (50.0° N, 14.6° E)									
March 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		5.0 30	290						
01		4.8 30	280						
02		4.6 30	275						
03		4.4 30	290						
04		4.1 28	275						
05		4.2 30	255						
06	---	6.1 30	240	---	110	2.1			
07	---	7.6 30	220	---	100	2.6			
08	325	8.1 29	215	4.4	100	3.0			
09	325	9.5 29	210	4.6	100	3.2			3.0
10	275	9.9 29	200	4.4	100	3.2			
11	270	10.4 30	205	5.0	100	3.4			
12	260	10.5 28	210	4.7	100	3.4			
13	260	10.4 29	210	4.5	100	3.2			
14	---	10.3 29	220	---	100	3.1			
15	---	10.0 30	225	---	100	2.9			
16	---	9.4 29	225	---	105	2.3			
17	---	9.2 26	225	---	---	---			
18	---	8.4 28	220	---	---	---			
19	---	7.0 25	230	---	---	---			
20	---	6.2 27	240	---	---	---			
21	---	5.4 28	255	---	---	---			
22	---	5.2 27	280	---	---	---			
23	---	5.1 27	280	---	---	---			

Time: 0.0°.

Sweep: 1.0 Mc to 18.0 Mc.

Table 45

Ibadan, Nigeria (7.4° N, 3.9° E)									
March 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		8.8 30	240					2.90	
01		8.7 30	250					(3.00)	
02		8.7 29	250					(3.20)	
03		8.3 26	230					3.20	
04		6.6 29	230					3.30	
05		5.4 29	220					3.40	
06		6.3 28	250			1.70		3.15	
07		9.7 30	250			2.70		3.25	
08		11.5 30	230			3.20	6.2	2.95	
09		12.6 29	220			3.60	6.4	2.55	
10		12.4 30	210			(3.90)	8.8	2.40	
11		11.7 30	205			(4.05)	8.4	2.35	
12		11.8 30	200			(4.10)	8.6	2.35	
13		11.6 31	200			4.00	8.6	2.40	
14		11.7 30	200			3.80	8.6	2.35	
15		11.9 29	205			3.55	8.5	2.30	
16		11.7 31	220			3.20	8.6	2.30	
17	(11.6)	31	250			2.60	6.3	<2.35	
18	>10.8	29	300			1.50		<2.35	
19	>9.5	29	405					2.10	
20	9.0	28	405					(2.20)	
21	9.0	29	345					(2.50)	
22	9.1	29	275					(2.75)	
23	9.1	30	250					(3.00)	

Time: 0.0°.

Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 47

Brisbane, Australia (27.5° S, 152.9° E)									
March 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		7.2 28	290					2.80	
01		7.1 27	280					2.80	
02		7.0 28	270					2.75	
03		6.2 26	270					2.75	
04		6.0 27	290					2.65	
05		6.0 24	290			<2.00		2.70	
06		7.0 26	250			---		3.00	
07		8.7 26	240			2.70		3.15	
08		9.5 27	230			3.05	3.5	3.10	
09		10.5 28	220			3.40	4.0	3.05	
10		11.1 27	215			3.60	4.2	2.95	
11		11.8 29	210			3.70	4.2	2.90	
12		11.8 28	210			3.80	4.3	2.85	
13		11.8 29	220			3.80	4.0	2.85	
14		11.9 30	220			3.70	4.0	2.85	
15		11.8 30	230			3.50	3.7	2.90	
16		11.4 30	240			3.00	3.5	2.90	
17		11.0 30	240			2.50	3.4	2.95	
18		9.9 30	240			2.05		2.95	
19		8.5 30	240			<1.60		2.80	
20		8.1 29	260				2.4	2.70	
21		7.7 29	290					2.70	
22		(7.7)	27	290				2.75	
23		(7.4)	28	280				2.75	

Time: 150.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 46

La Paz, Bolivia (16.5° S, 68.1° W)									
March 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>11.35	14	240			4.5	(2.85)	
01		12.9	12	220			4.1	3.20	
02		>10.95	16	200			3.2	3.30	
03		7.3	18	200				3.30	
04		5.8	15	220				3.20	
05		4.7	16	230				3.08	
06		4.7	19	240			2.5	3.10	
07		7.4	23	240	(121)	2.10	4.0	3.20	
08		10.8	23	230	110	2.85	4.6	3.22	
09		12.4	25	220	101	(3.35)	5.0	3.05	
10		(13.6)	24	210	104	(3.70)	7.0	(2.75)	
11	---	14.3	24	205	---	(3.95)	7.2	2.50	
12	---	>13.9	23	200	---	(4.00)	7.5	2.48	
13	---	(12.4)	26	200	---	(4.00)	7.5	(2.40)	
14	---	(12.4)	25	200	---	(3.95)	7.2	(2.35)	
15	---	12.55	26	200	(101)	(3.70)	7.4	2.40	
16	---	>12.9	26	205	---	(3.50)	7.1	(2.40)	
17	---	(13.1)	28	230	---	(3.00)	6.0	(2.40)	
18	---	(12.1)	28	250	(113)	(2.40)	5.6	(2.45)	
19	---	11.1	28	290			3.0	(2.40)	
20	---	(9.5)	21	350				(2.20)	
21	---	(9.5)	13	315				(2.45)	
22	---	>9.25	12	300			1.8	(2.70)	
23	---	(10.2)	11	255			3.2	(2.80)	

Time: 60.0°W.

Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 48

Mundaring, W. Australia (32.0° S, 116.2° E)									
March 1960									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00		>4.5	2	(270)					
01		>5.8	3	(280)				----	
02		>4.5	3	(275)				----	
03		>4.5	3	270					
04		>4.1	8	(265)				<3.10	
05		>4.2	12	260				<3.10	
06		>4.4	8	(265)				<3.20	
07		>6.2	8	240				----	
08		>7.2	10	230	---		2.85	3.0	(3.40)
09		(7.8)	8	220	---		3.25	3.5	(3.30)
10		(7.6)	7	215	5.3		3.50	3.9	(3.20)
11		>8.4	8	220	5.5		3.60	4.3	<3.10
12		(7.8)	7	210	---		3.70	4.0	(2.90)
13		(7.7)	7	210	---		3.70	4.0	<2.90
14		>8.5	5	220	---		3.60	4.0	<3.10
15		>7.9	6	220	5.2		3.50	3.7	<3.00
16		(8.0)	7	230	---		3.20	3.3	<3.30
17		>7.0	6	240	---		2.90	3.0	<3.35
18		>7.2	2	240	---		----	(4.0)	

Table 49

Concepcion, Chile (36.6° S, 73.0° W)								March 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	8.95	30	290				1.8	2.75
01	8.4	29	295				2.4	2.75
02	8.5	30	280				2.2	2.85
03	8.2	29	250				2.2	3.05
04	7.0	30	220				2.4	3.20
05	5.55	30	235				2.0	2.75
06	6.7	29	250		<159	1.75		3.00
07	9.1	29	230		111	2.60		3.30
08	---	10.5	31	230	109	3.10	3.2	3.25
09	---	11.7	31	220	109	3.40	3.6	3.15
10	---	11.95	30	220	107	3.60	4.0	3.05
11	---	12.75	30	(210)	109	3.70	4.1	3.00
12	---	13.5	31	215	109	3.70	4.3	3.00
13	(300)	14.1	31	<230	109	3.70	4.4	3.00
14	(290)	14.3	31	<240	109	3.55	4.4	3.00
15	(285)	14.3	31	240	109	3.32	4.1	3.00
16	(280)	14.0	31	240	109	3.00	3.5	3.05
17	(270)	14.1	31	250	117	2.50	3.0	3.10
18	13.95	30	250		(131)	1.95	3.6	3.15
19	11.5	31	240				3.8	3.10
20	10.2	29	240				2.5	2.85
21	9.4	29	280				2.3	2.70
22	9.2	29	290				2.4	2.75
23	9.1	31	290				1.8	2.75

Time: 75.0°W.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 50

Byrd Station (80.0° S, 120.0° W)								March 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		(5.9)	13	(340)				3.3 (2.60)
01		(5.95)	16	(335)				3.2 (2.65)
02	---	(5.8)	17	<345				3.8 (2.65)
03	---	(5.9)	15	<335				3.5 (2.70)
04	---	(5.0)	18	(285)				3.7 (2.90)
05	---	(5.15)	20	270				(2.95)
06	---	5.2	26	270				3.00
07		5.7	26	260				3.05
08		6.3	28	<255				3.08
09	---	6.7	29	(260)		<129		3.05
10	---	6.9	31	250		<127	2.42	3.05
11	(370)	7.5	29	250	(3.9)	<121	(2.48)	3.10
12	310	(7.75)	28	250		<123	(2.30)	(3.00)
13	(350)	(7.9)	27	250		(119)	(2.35)	3.08
14	(545)	(7.8)	26	250		<126	2.35	(3.10)
15	(420)	(7.7)	24	270		<125	2.30	(2.95)
16	---	(6.0)	24	290		<118	(2.40)	(2.90)
17	---	(5.7)	18	280		<135	(2.75)	(2.85)
18	---	(5.7)	15	300		<131	(2.50)	(2.80)
19	---	(6.0)	16	305				3.6 (2.75)
20		(6.2)	14	300				3.4 (2.70)
21		(6.4)	11	305				4.1 (2.65)
22		(6.1)	13	315				2.5 (2.65)
23		(5.8)	22	<340				3.6 (2.60)

Time: Local.  
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 51

Lindau/Harz, Germany (51.6° N, 10.1° E)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	4.73	29	280					2.62
01	4.70	29	278					2.62
02	4.22	29	291					2.56
03	4.24	26	294					2.50
04	4.12	26	293					2.62
05	3.65	23	275					2.70
06	3.52	28	254					2.80
07	3.90	29	252					2.80
08	7.05	29	229		---	E		3.18
09	9.25	29	223		110	2.39	2.3	3.22
10	10.68	28	223		110	2.77	3.5	3.12
11	11.68	28	221		107	3.02	3.6	3.10
12	12.28	28	222		106	3.16		3.05
13	12.60	29	222		107	3.12	2.9	3.03
14	12.20	29	230		109	3.05		3.00
15	12.00	27	230		111	2.87	2.8	3.03
16	11.30	27	226		---	2.54	2.7	3.10
17	10.40	25	223		---	2.00	3.1	3.12
18	9.65	29	220		---	E	2.3	3.04
19	8.22	29	222					3.02
20	6.90	29	224					2.93
21	5.95	29	242					2.80
22	5.35	29	255					2.73
23	4.77	29	270					2.67

Time: 15.0°E.  
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 53

Wakkanai, Japan (45.4° N, 141.7° E)								January 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	3.6	30	325					2.70
01	3.5	30	320					2.65
02	3.4	30	320					2.70
03	3.4	31	295					2.70
04	3.4	31	300					2.65
05	3.4	31	300					2.75
06	3.3	31	275					2.90
07	5.6	31	250					3.00
08	9.8	30	230			2.25		3.25
09	12.2	30	230			2.75		3.20
10	12.7	29	230			3.05		3.20
11	12.5	29	230			3.15		3.15
12	11.3	29	225			3.20		3.10
13	---	11.2	30	230		3.05		3.10
14		10.8	30	235		2.80		3.05
15		9.8	30	225		2.40		3.05
16		9.0	31	225			2.00	3.10
17		8.0	31	225				3.05
18		6.1	31	230				3.10
19		4.7	31	240				3.00
20		3.8	31	270				2.85
21		3.8	30	300				2.75
22		3.8	30	300				2.75
23		3.8	30	315				2.70

Time: 135.0°E.  
Sweep: 1.0 Mc to 20.7 Mc in 1 minute.

Table 52

Tahiti, Society Is. (17.7° S, 149.3° W)								February 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	13.4	20	245					3.05
01	9.8	17	225					3.10
02	8.3	21	240					2.75
03	8.0	24	295					2.65
04	8.0	21	290					2.70
05	>8.0	22	290					2.80
06	9.0	25	275					3.00
07	10.8	23	245					3.10
08	11.5	26	235					3.10
09	---	12.6	22	220				2.90
10	---	13.8	23	225				2.70
11	---	14.5	21	230				2.70
12	---	15.5	22	220				2.75
13	(355)	16.0	24	225				2.80
14	345	16.0	26	225				2.80
15	360	15.8	26	230				2.90
16	(340)	>15.0	24	235				2.80
17	---	14.0	24	250				2.80
18	---	13.8	23	265				2.75
19	(13.5)	22	310					2.60
20	>13.7	20	330					2.60
21	14.3	15	315					3.0 (2.75)
22	14.2	14	285					2.2
23	13.8	16	260					1.8 3.05

Time: 150.0°W.  
Sweep: 1.2 Mc to 17.0 Mc in 1 minute.

Table 54

Akita, Japan (39.7° N, 140.1° E)								January 1960
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00	3.9	31	295					2.60
01	3.6	31	310					2.65
02	3.6	31	325					2.60
03	3.5	30	310					2.60
04	3.5	30	300					2.70
05	3.5	30	310					2.65
06	3.6	30	280					2.85
07	6.5	31	245					3.20
08	10.2	31	230					3.25
09	---	12.4	30	235				3.25
10	---	13.1	30	230				3.15
11	240	12.6	30	230				3.45
12	---	12.2	30	230				3.05
13	---	11.1	31	230				3.30
14	---	11.1	31	240				3.10
15	10.3	31	240					2.70
16	9.4	31	235					2.35
17	8.6	31	230					3.15
18	7.2	31	230					3.20
19	5.6	31	230					3.15
20	4.2	30	250					2.90
21	4.2	30	280					2.70
22	4.1	31	290					2.75
23	4.2	31	280					2.80

Time: 135.0°E.  
Sweep: 1.6 Mc to 20.0 Mc in 20 seconds.

Table 55

Tokyo, Japan (35.7° N, 139.5° E)							
January 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	4.2	27	305				2.70
01	3.8	27	315				2.70
02	3.6	26	320				2.60
03	3.4	25	<335				2.60
04	3.5	25	315				2.65
05	3.4	25	350				2.60
06	3.6	24	305				2.80
07	6.7	23	250			----	3.05
08	10.6	24	240			2.60	3.20
09	---	12.2	28	245		(3.15)	3.15
10	---	13.3	29	240		3.40	3.10
11	---	13.0	29	235		3.50	3.05
12	---	12.5	31	240		3.60	2.95
13	---	12.0	31	240		3.50	2.90
14	---	11.6	31	245		3.30	2.90
15	10.9	31	<250			3.00	2.95
16	(9.7)	31	240			(2.50)	(3.05)
17	9.2	30	245				3.05
18	(7.8)	30	245				(3.00)
19	6.4	29	240				3.10
20	4.8	30	250				2.90
21	4.6	29	<300				2.75
22	4.5	28	300				2.70
23	4.6	28	300				2.70

Time: 135.0°E.

Sweep: 1.0 Mc to 20.0 Mc in 20 seconds.

Table 56

Yamagawa, Japan (31.2° N, 130.6° E)							
January 1960							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	5.6	30	275				2.75
01	4.6	30	280				2.70
02	4.1	30	275				2.70
03	3.7	30	295				2.65
04	3.4	30	290				2.60
05	3.4	30	320				2.60
06	3.5	30	300				2.70
07	5.1	30	290				2.80
08	9.7	29	250			2.20	3.25
09	12.4	28	245			3.00	3.15
10	13.6	29	240			3.40	3.10
11	14.0	28	240			3.60	3.05
12	13.7	28	235			3.70	2.90
13	13.8	28	240			3.70	4.0
14	13.6	27	240			3.60	2.80
15	12.9	27	245			3.40	3.4
16	12.5	28	250			3.00	3.2
17	11.2	31	245			2.20	2.9
18	10.4	31	240				3.1
19	9.0	30	245				3.1
20	(8.4)	29	240				2.2
21	7.5	28	240				2.8
22	6.4	29	250				2.70
23	5.8	29	270				2.80

Time: 135.0°E.

Sweep: 1.0 Mc to 20.3 Mc in 30 seconds.

Table 57

Delhi, India (28.6° N, 77.2° E)							
February 1959							
Time	*	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	---	>8.4	24				----
01	---	>7.5	19				----
02	---	(6.8)	7				----
03	---	(7.7)	2				----
04	(350)	>4.5	23				(2.80)
05	360	>3.7	26				(2.80)
06	340	4.7	21				2.95
07	280	8.9	17				3.35
08	260	12.2	27		120	3.0	3.45
09	280	13.3	27		100	3.2	3.30
10	300	13.8	26		100	3.7	3.10
11	320	14.4	25		100	3.8	3.00
12	340	14.2	22		100	3.8	2.95
13	340	14.6	24		100	3.8	2.85
14	360	14.1	24		---	---	2.80
15	360	13.8	26		100	3.5	2.80
16	(360)	>14.1	21		---	---	(2.80)
17	(320)	>13.4	25		---	---	(3.00)
18	---	>13.7	22				----
19	---	(13.3)	24				----
20	---	>13.5	19				----
21	---	>11.2	16				----
22	---	>9.2	20				----
23	(370)	>8.7	23				(2.65)

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

\* Height at 0.83 foF2.

Table 59

Calcutta, India (23.0° N, 88.6° E)							
February 1959							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	0	28	240				----
01	(13.0)	27	230				(3.35)
02	(11.0)	28	225				<3.4
03	(8.5)	28	220				3.5
04	>6.0	28	250				3.5
05	(4.6)	27	250				3.3
06	5.0	28	250				3.2
07	9.0	28	250		110	2.7	3.3
08	0	28	250		100	3.2	3.3
09	---	0	28	250	---	100	3.7
10	(350)	0	28	250	(9.0)	100	(3.9)
11	(350)	0	27	250	(9.0)	100	>4.0
12	(400)	0	27	250	(9.0)	100	>4.0
13	(400)	0	24	250	(8.0)	100	4.0
14	(400)	0	24	250	(8.0)	100	4.0
15	385	0	23	250	7.6	100	3.7
16	(350)	0	26	240	(8.0)	100	3.5
17	---	0	27	250	---	100	3.0
18	0	27	260				>2.2
19	0	26	285				2.1
20	0	27	260				
21	0	28	240				
22	0	27	240				
23	0	28	240				

Time: 90.0°E.

Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 58

Ahmedabad, India (23.0° N, 72.6° E)							
February 1959							
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	13.0	25	250				2.80
01	11.5	26	250				1.4
02	10.1	25	245				2.95
03	8.6	26	240				3.00
04	6.6	26	225				2.1
05	5.0	26	240				2.90
06	4.2	25	270				2.85
07	8.2	24	265			---	2.95
08	12.4	24	250			---	2.7
09	(250)	13.8	23	240	---	110	3.5
10	290	14.4	26	230	5.0	110	3.8
11	300	15.2	26	220	5.0	110	4.0
12	350	>15.3	24	220	5.0	110	4.0
13	350	15.8	25	225	4.9	110	4.0
14	350	16.0	25	230	4.7	110	4.0
15	350	15.5	27	(230)	---	110	3.8
16	350	15.6	26	(250)	---	110	3.4
17	300	15.6	26	250	---	115	2.7
18	>16.0	27	265			---	---
19	16.7	25	280				2.5
20	>16.0	26	300				2.5
21	(17.0)	26	250				1.8
22	16.0	27	240				2.85
23	14.3	26	240				2.75

Time: 75.0°E.

Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 60

Bombay, India (19.0° N, 72.8° E)							
February 1959							
Time	*	foF2—Count	h'F	foF1	h'E	foE	foEs (M3000)F2
00	---	>10.2	7				----
01	---	>9.3	12				----
02	---	>8.5	20				----
03	(320)	>8.3	22				(3.0)
04	(300)	>6.7	22				(3.1)
05	(290)	>6.0	22				(3.2)
06	(280)	>5.8	22				(3.3)
07	---	>7.4	27			---	(3.25)
08	---	---	0			---	----
09	---	>12.7	24			---	(3.1)
10	(320)	(14.2)	22			---	(3.0)
11	(360)	>14.5	22			---	(2.9)
12	(380)	>14.6	22			---	<2.7
13	---	>14.8	6			---	----
14	---	>14.8	24			---	----
15	---	>14.7	25			---	----
16	---	>14.5	22			---	----
17	---	>13.5	25			---	----
18	---	>13.9	27			---	----
19	---	>13.5	26			---	----
20	---	---	0			---	----
21	---	>11.8	8			---	----
22	---	>11.0	5			---	----
23	---	>11.5	8			---	----

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

\* Height at 0.83 foF2.



Table 61

Madras, India (13.1° N, 80.3° E)									
February 1959									
Time	*	fof2-Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00	---	12.8	28						
01	---	11.8	28						
02	---	9.8	22						
03	---	8.4	25						
04	(310)	7.3	24						
05	280	5.8	20					(3.30)	
06	300	6.6	28					3.20	
07	320	10.9	25					2.95	
08	360	13.2	27					2.75	
09	400	13.8	28					2.55	
10	460	13.3	23					2.40	
11	480	12.9	21					2.30	
12	520	12.4	24					2.25	
13	520	12.8	14					(2.20)	
14	540	13.5	17					2.20	
15	540	13.2	21					2.20	
16	560	13.0	17					(2.10)	
17	560	12.8	24					---	
18	(620)	11.8	25					---	
19	---	10.9	25					---	
20	---	11.8	23					---	
21	---	13.2	22					---	
22	---	13.2	23					---	
23	(360)	13.3	27					---	

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

\* Height at 0.83 fof2.

Table 62

Tiruchy, India (10.8° N, 78.7° E)									
February 1959									
Time	*	fof2-Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00	---	>10.4	4						
01	---	>10.2	6						
02	---	>9.5	5						
03	---	(8.7)	3						
04	(290)	(7.2)	9						(3.25)
05	(260)	6.0	14						(3.50)
06	200	6.8	15						3.20
07	300	(10.4)	26				5.7		3.20
08	360	12.4	27				>9.0		2.80
09	420	>13.1	22				11.3		2.50
10	460	13.0	25				>13.2		2.35
11	480	12.9	28				13.5		2.30
12	520	12.6	28				>13.5		2.25
13	520	12.7	27				>13.5		2.25
14	520	13.0	27				>13.1		2.20
15	520	13.2	26				>12.1		2.10
16	(560)	12.6	10				>11.0		---
17	---	(13.1)	2						
18	---	(10.2)	28						
19	---	(10.0)	12						
20	---	(9.7)	4						
21	---	>10.2	1						
22	---	(11.4)	4						
23	---	(10.8)	5						

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

\* Height at 0.83 fof2.

Table 63

Kodaikanal, India (10.2° N, 77.5° E)									
February 1959									
Time	h'F2	fof2-Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00	11.2	14	240					2.70	
01	10.6	15	240					2.90	
02	(9.6)	18	235					(2.90)	
03	8.0	20	240					3.00	
04	7.9	18	240					3.00	
05	6.2	23	225					3.15	
06	5.8	23	255					(2.90)	
07	9.8	26	260		120	2.6	7.0	2.85	
08	11.9	28	240		110	3.2	9.4	2.60	
09	12.8	28	230		110	---	11.6	2.40	
10	12.6	28	220		---	---	13.0	2.30	
11	12.4	28	215		---	---	13.4	2.20	
12	12.1	27	210		---	---	13.4	2.15	
13	12.4	28	210		---	---	13.5	2.15	
14	12.6	28	220		---	---	12.8	2.15	
15	12.6	28	225		---	---	12.6	2.15	
16	12.2	28	240		115	---	10.4	2.10	
17	12.0	26	260		120	---	8.6	2.10	
18	11.0	26	305					2.05	
19	9.3	20	420					2.00	
20	(9.7)	7	400					(2.15)	
21	(10.6)	6	360					(2.30)	
22	(11.4)	7	280					(2.55)	
23	11.4	10	255					(2.65)	

Time: 75.0°E.

Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 65

Tsumeb, South W. Africa (19.2° S, 17.7° E)									
February 1959									
Time	h'F2	fof2-Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00	7.63	27	258				1.5	2.75	
01	7.00	27	242				1.6	2.75	
02	6.00	26	248				1.6	2.62	
03	5.48	26	278				1.7	2.64	
04	5.30	26	280				2.0	2.66	
05	4.81	25	268				1.8	2.72	
06	6.90	27	250		128	1.86	2.3	2.98	
07	9.10	27	240		110	2.81		2.96	
08	10.72	27	225		105	3.38	3.6	2.83	
09	11.60	27	220		105	3.72	3.7	2.70	
10	---	12.01	25	215	---	---	3.98	4.0	2.58
11	---	12.68	26	215	---	---	4.15		2.54
12	(380)	12.80	26	215	---	6.45	4.24		2.51
13	400	13.00	26	220	---	6.75	4.22		2.49
14	(380)	13.00	24	218	---	6.65	4.10		2.49
15	---	12.68	27	230	---	---	3.82		2.50
16	---	12.30	27	230	---	110	3.48	3.8	2.51
17	---	11.91	26	243	---	110	2.96	3.7	2.56
18	---	11.80	27	260	---	120	2.12	2.9	2.62
19	---	11.33	25	256	---	---	2.7		2.69
20	---	10.85	27	252	---	---	2.1		2.71
21	---	9.98	26	250	---	---	2.5		2.72
22	---	9.25	27	254	---	---	1.8		2.73
23	---	8.61	27	260	---	---	2.1		2.75

Time: 15.0°E.

Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 64

Trivandrum, India (8.5° N, 77.0° E)									
February 1959									
Time	*	fof2-Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00	---	>9.4	10						
01	---	>9.4	12						
02	---	>9.0	14						
03	(320)	>8.9	18						(3.00)
04	320	8.0	17						3.10
05	300	6.3	18						3.10
06	340	5.8	20						2.85
07	360	9.8	27				>6.9		2.70
08	400	11.8	28				11.2		2.60
09	430	12.6	28				>12.4		2.50
10	460	12.8	27				12.9		2.40
11	480	12.4	26				13.0		2.30
12	500	12.4	27				13.0		2.25
13	520	12.5	25				13.2		2.20
14	560	>12.9	20				>12.5		2.20
15	560	12.5	27				12.4		2.15
16	560	12.4	28				>11.6		2.15
17	560	(11.8)	25						(2.15)
18	---	>10.2	23						---
19	---	>9.0	5						
20	---	>9.8	1						
21	---	>9.5	3						
22	---	>9.2	8						
23	---	>10.0	9						

Time: 75.0°E.

Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.

\* Height at 0.83 fof2.

Table 66

Rarotonga I. (21.2° S, 159.8° W)									
February 1959									
Time	h'F2	fof2-Count	h'F	fof1	h'E	foE	fEs	(M3000)F2	
00		(9.8)	17				2.6	2.45	
01		8.9	22				2.0	2.40	
02		8.0	22				1.5	2.35	
03		8.9	27				1.4	2.40	
04		8.4	27				1.3	2.40	
05		8.2	26				1.5	2.40	
06		9.6	24				2.4	2.80	
07		(11.0)	27				3.4	(2.80)	
08		11.4	25				4.0	2.70	
09		12.4	26				4.3	2.55	
10		13.5	27				4.6	2.50	
11		15.1	27				4.8	2.50	
12		15.8	20				4.0	2.50	
13		16.4	22				4.7	2.45	
14		16.4	22				4.4	2.45	
15		15.5	26				4.4	2.45	
16		14.8	27				(4.4)	2.40	
17		(13.5)	26				(4.0)	(2.50)	
18		(13.4)	24				3.8	(2.50)	
19		(12.9)	23				3.4	(2.40)	
20		(13.0)	13				3.5	(2.40)	
21		(12.4)	18				3.2	(2.40)	
22		(10.9)	13				3.0	(2.50)	
23		(10.8)	14				2.6	(2.55)	

Time: 165.0°W.

Sweep:

Table 67

Christchurch, New Zealand (43.6° S, 172.8° E)									
February 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	(6,9)	7	<300				2.2	(2,40)	
01	(6,8)	11	<300				<1.7	(2,35)	
02	(6,0)	16	<300				<1.7	(2,30)	
03	(6,0)	18	(310)				<1.6	(2,30)	
04	5.6	18	<300				1.6	2,30	
05	5.4	22	<300				1.3	2,40	
06	5.6	17	290		120	1.8	2.55	2,50	
07	---	5.6	17	250	---	110	2.6	2,60	
08	(410)	6.4	19	240	4.6	110	(3,2)	2,65	
09	450	6.4	15	240	5.1	100	3.6	2,55	
10	460	7.6	16	220	5.4	105	3.8	2,55	
11	440	7.9	15	220	5.5	100	4.0	2,50	
12	440	(8,3)	13	210	5.9	100	4.1	(2,60)	
13	450	(8,4)	17	230	6.0	<105	4.1	2,50	
14	410	(9,3)	20	230	6.0	105	4.0	<2,8	
15	420	(8,7)	19	230	6.0	100	4.0	(2,55)	
16	420	(8,6)	16	240	6.0	105	3.7	(2,50)	
17	420	7.9	13	240	5.2	110	3.4	2,50	
18	---	(7,7)	9	250	---	105	2.9	(2,50)	
19	(8,0)	5	260				2.5	(2,65)	
20	(8,2)	6	<270				<1.9	(2,50)	
21	(7,9)	2	<270				2.9	---	
22	(7,8)	6	(290)				3.5	(2,40)	
23	(7,2)	10	<300				<2.3	(2,35)	

Time: 180.0°E.  
Sweep: 1.0 Mc to 22.0 Mc in 7 seconds.

Table 68

Campbell I. (52.5° S, 169.2° E)									
February 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	5.3	21					3.8	2,25	
01	5.0	19					3.6	2,35	
02	4.4	22					3.5	2,30	
03	4.1	20					3.1	2,30	
04	4.2	20					2.2	2,35	
05	4.6	25					>2.1	2,55	
06	5.4	27						2,70	
07	5.6	27						2,55	
08	6.4	24						2,50	
09	6.6	26						2,50	
10	7.1	27					<4.0	2,35	
11	7.4	27						2,35	
12	7.6	26						2,40	
13	7.9	28						2,40	
14	8.0	28						2,40	
15	8.0	28						2,40	
16	8.0	28						2,40	
17	8.4	27					3.2	2,50	
18	(8,5)	25					3.0	(2,55)	
19	7.7	24					3.0	2,50	
20	7.3	25					2.7	2,45	
21	(6,8)	23					3.1	2,30	
22	5.6	23					3.6	2,25	
23	5.5	21					3.5	2,30	

Time: 165.0°E.  
Sweep: 1.0 Mc to 13.0 Mc in 2 minutes.

Table 69

Port Lockroy (64.8° S, 63.5° W)									
February 1959									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	9.0	26					1.5	2,40	
01	8.6	22					1.8	2,30	
02	8.4	19					1.3	<2,40	
03	7.4	20					1.6	2,30	
04	7.3	21					1.8	2,30	
05	7.2	24					2.1	2,35	
06	7.6	25					2.5	2,40	
07	7.6	26					3.1	2,50	
08	7.8	26					3.6	2,55	
09	7.8	26					4.1	2,60	
10	8.4	27					4.8	2,60	
11	8.5	27					5.0	2,70	
12	9.0	26					4.8	2,70	
13	8.6	26					4.6	2,75	
14	8.5	24					4.3	2,60	
15	8.5	25					4.0	2,60	
16	8.6	26					4.2	2,80	
17	8.5	25					3.7	2,85	
18	8.4	26					3.8	2,90	
19	8.6	27					3.0	2,80	
20	8.8	25					2.3	2,70	
21	9.0	24					1.9	2,55	
22	9.2	25					1.7	2,45	
23	9.2	25					1.2	2,45	

Time: 60.0°W.  
Sweep: 0.67 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 70

Halley Bay (75.5° S, 26.6° W)									
February 1958									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	>5.35	22	370		135	(2,05)	2.2	(2,40)	
01	>5.60	23	380		130	(2,10)	2.3	(2,30)	
02	---	>6.00	20	300	---	>2.20	2.4	(2,30)	
03	(470)	>5.70	20	350	3.70	110	<2.20	2.4	(2,30)
04	430	>6.00	22	(330)	3.90	120	<2.40	2.5	(2,30)
05	540	6.40	23	290	3.85	125	(2,50)	<2,6	(2,30)
06	500	>6.50	21	265	4.10	120	(2,70)	2,30	
07	485	7.35	22	255	4.30	<120	(2,90)	2,35	
08	500	>6.90	24	(250)	<4.60	115	<3.10	(3,1)	<2,35
09	550	6.65	24	(250)	4.60	110	>3.10	(3,2)	2,35
10	500	6.50	22	255	4.90	110	>3.10	(3,4)	2,40
11	565	6.55	20	(250)	5.00	110	<3.50	<3,6	2,40
12	580	6.30	19	(250)	5.00	110	<3.55	<3,8	2,40
13	550	6.40	24	(250)	5.00	110	<3.50	<3,6	2,60
14	500	6.60	26	(250)	4.90	110	(3,30)	2,60	
15	>465	6.80	23	250	5.00	110	(3,10)	(3,1)	2,70
16	(430)	>6.90	24	(250)	5.10	110	(3,00)	3.0	2,75
17	---	7.10	22	255	<4.20	115	<2.80	(2,9)	2,75
18	---	7.30	20	255	4.10	115	>2.60	<2,8	2,80
19	---	7.00	22	275	---	120	>2.40	2,75	
20	---	6.80	22	285	---	130	<2.50	<2,6	2,80
21	---	>6.40	22	305	<140	(2,40)	<2,6	2,80	
22	(5,30)	25	<320		165	(2,20)	2.3	2,60	
23	>5.00	24	325		---	<2,45	2.4	2,50	

Time: 30.0°W.  
Sweep: 0.65 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 71

Soya (Japanese Ship) (68.5° S, 37.0° E)*									
February 1957									
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2	
00	---	4.8	18	390		130	2.7	3.9	
01	---	5.0	18	380	---	120	3.4	3.6	
02	(440)	5.4	19	370	---	130	3.2	3.2	
03	470	5.8	16	320	3.8	130	3.0	3.2	
04	450	6.5	16	280	4.0	120	3.2	3.4	
05	460	7.2	16	260	4.6	120	3.2	3.8	
06	430	8.3	13	240	4.6	120	3.3		
07	450	7.0	21	240	4.8	120	3.4		
08	460	7.2	20	240	5.0	120	3.4		
09	480	7.0	22	240	5.0	120	3.4		
10	460	6.8	23	240	5.0	120	3.3		
11	460	6.6	24	240	5.1	120	3.3		
12	440	6.8	27	240	5.0	120	3.2		
13	430	6.8	25	250	4.8	120	3.2		
14	400	6.6	24	250	4.3	120	3.0		
15	350	6.5	27	250	---	130	2.9		
16	(370)	6.2	25	270	---	130	2.5		
17	---	5.8	22	270	---	140	2.4		
18	---	5.4	22	290	---	140	2.4		
19	---	4.9	20	350	---	140	2.8		
20	---	4.7	17	340	---	130	2.8	3.4	
21	---	4.4	16	330	---	140	2.7	4.0	
22	---	4.4	15	370	---	130	2.5	3.7	
23	---	4.3	16	380	---	120	2.4	3.5	

Time: 0.0°.  
Sweep: 1.0 Mc to 25.0 Mc in 10 or 30 seconds.  
\* Average of 69° and 68° S, 39° and 35° E.

Table 72

Lwiro, Belgian Congo (2.3° S, 28.8° E)							February 1955	
Time	h'F2	foF2—Count	h'F	foF1	h'E	foE	foEs	(M3000)F2
00		5.6	26	200				3.60
01		3.3	26	220				3.06
02		3.0	25	250				3.08
03		2.7	25	260				3.17
04		2.5	23	260				3.06
05		2.2	24	270				3.16
06		2.9	23	260				3.18
07	255	6.0	23	230		118	2.05	2.9
08	275	7.0	23	215	(4.05)	113	2.70	2.8
09	310	7.6	25	210		4.35	111	3.10
10	330	8.4	27	200		4.50	109	3.35
11	320	9.2	25	200		4.60	109	3.50
12	360	>10.0	27	195		4.60	109	3.55
13	350	>10.0	27	190		4.60	109	3.50
14	340	>10.0	26	190		4.50	111	3.45
15	330	>10.0	28	195		4.40	111	3.25
16	330	>10.0	28	200		4.10	111	2.90
17	330	>10.0	28	220	----	113	2.40	3.0
18	(330)	9.6	28	240		---	1.70	2.0
19		9.1	28	270				2.0
20		8.7	28	260				1.6
21		8.6	26	250				
22		9.0	26	220				
23		8.6	26	210				

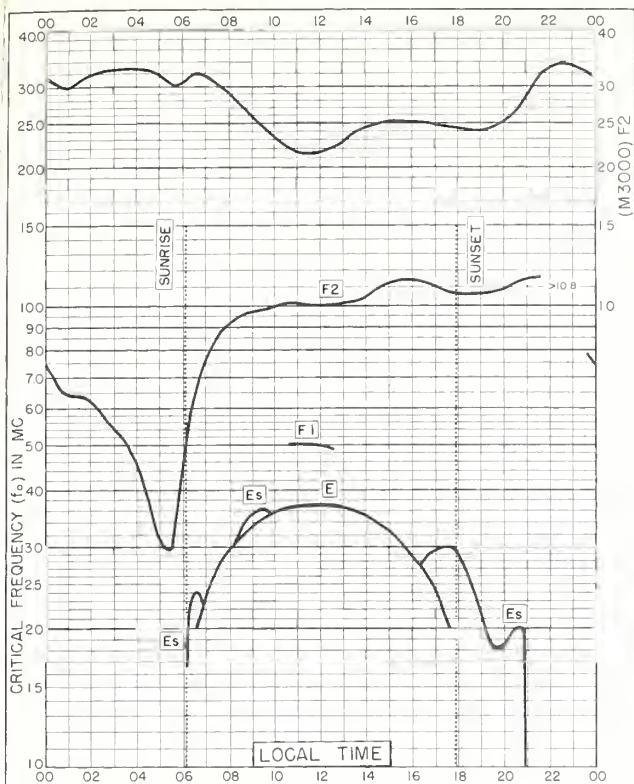


Fig. 1. TALARA, PERU  
4.6°S, 81.3°W

APRIL 1961

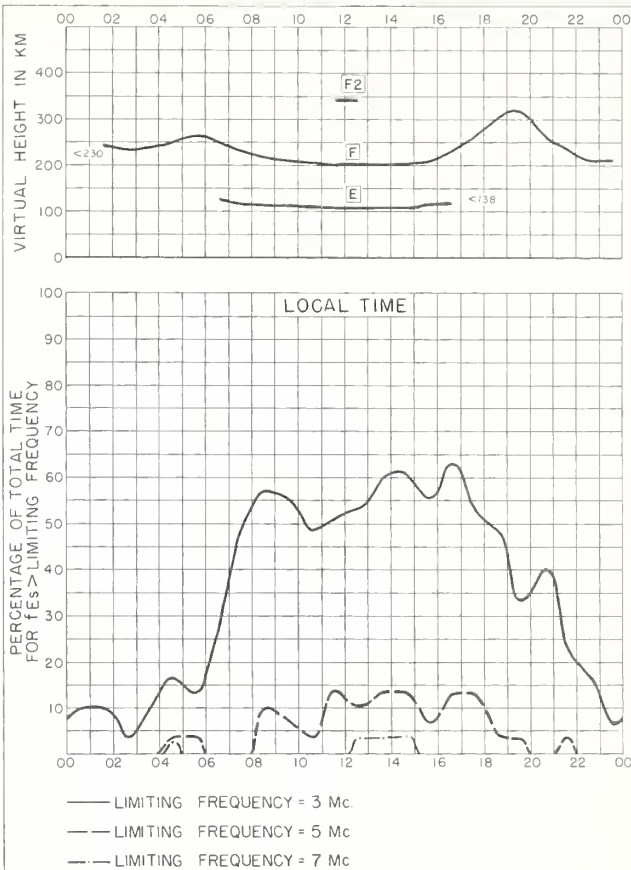


Fig. 2. TALARA, PERU

APRIL 1961

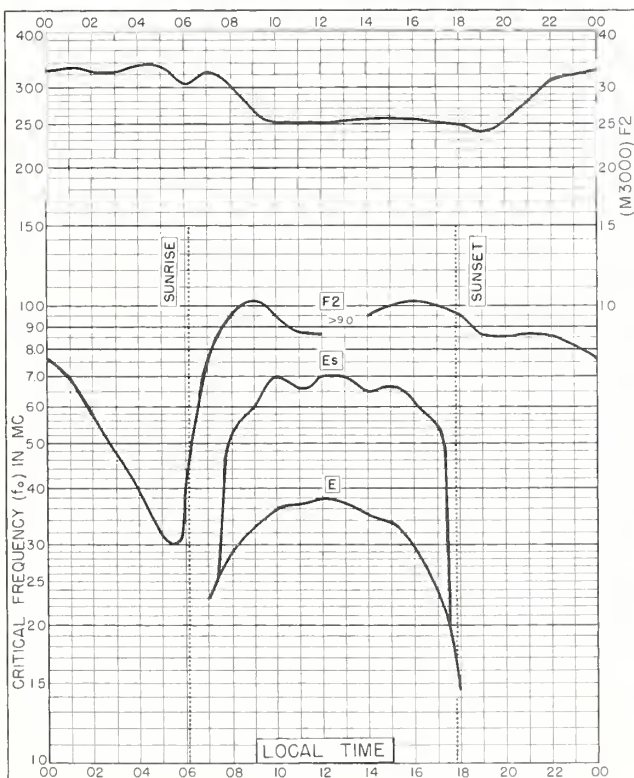


Fig. 3. HUANCAYO, PERU  
12.0°S, 75.3°W

APRIL 1961

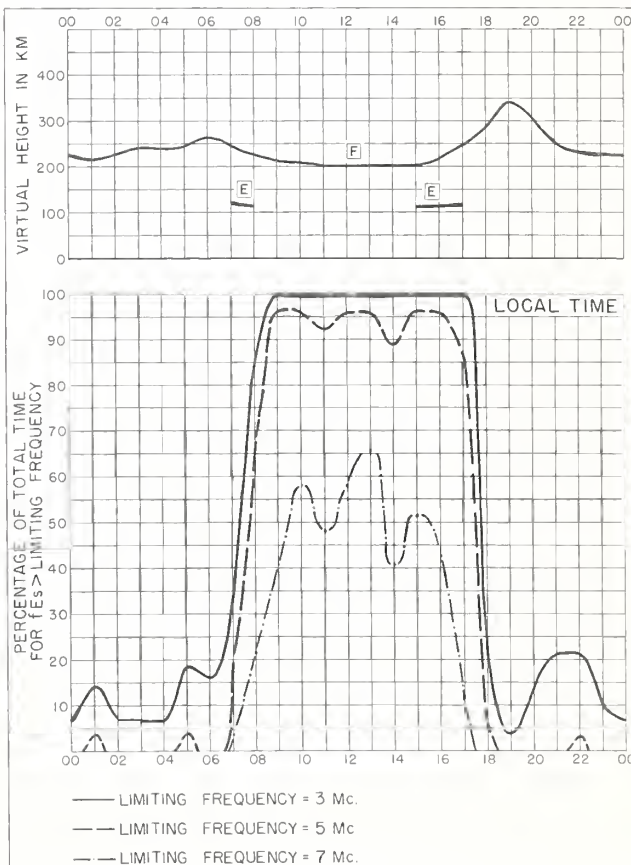


Fig. 4. HUANCAYO, PERU

APRIL 1961



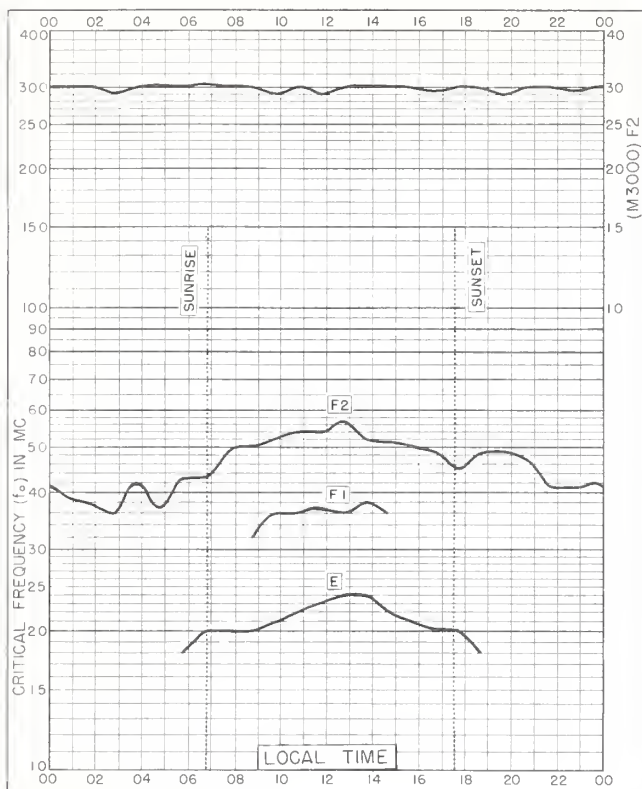


Fig. 5. RESOLUTE BAY, CANADA  
74.7°N, 94.9°W MARCH 1961

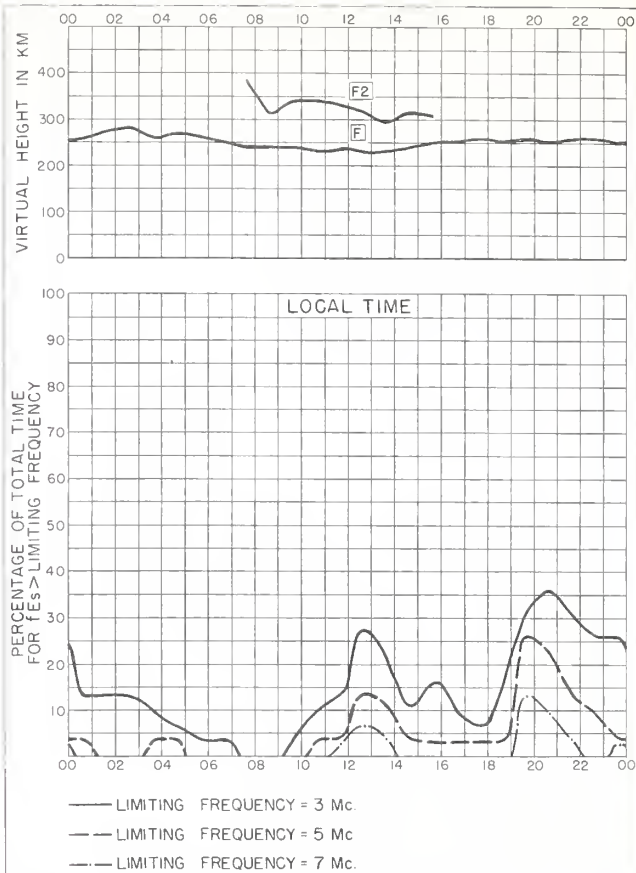


Fig. 6. RESOLUTE BAY, CANADA MARCH 1961



Fig. 7. TROMSØ, NORWAY  
69.7°N, 19.0°E MARCH 1961

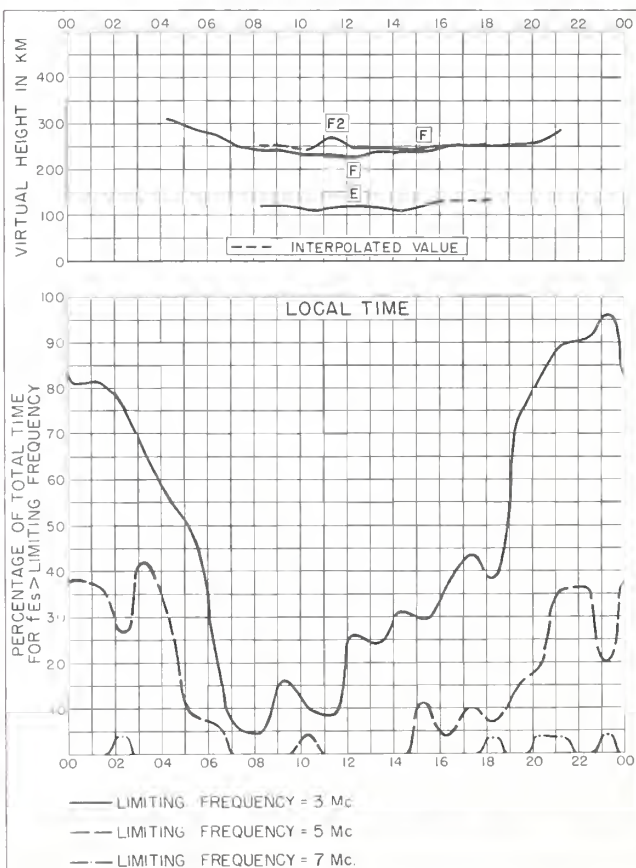


Fig. 8. TROMSØ, NORWAY MARCH 1961

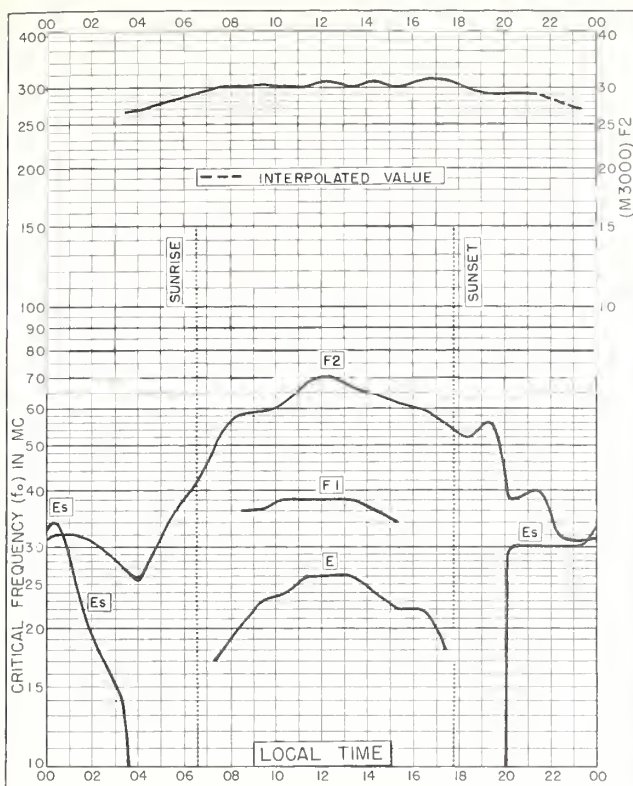


Fig. 9. KIRUNA, SWEDEN  
67.8°N, 20.3°E

MARCH 1961

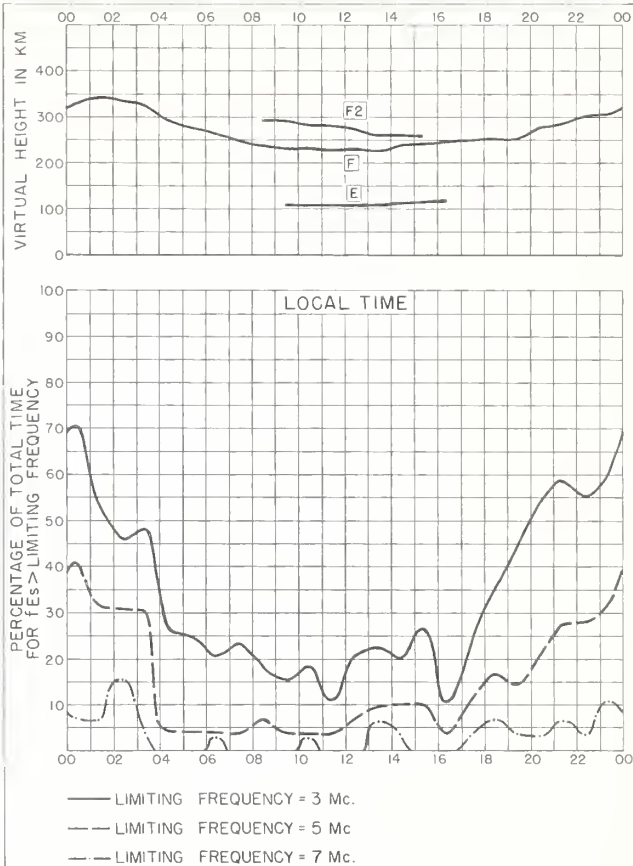


Fig. 10. KIRUNA, SWEDEN

MARCH 1961

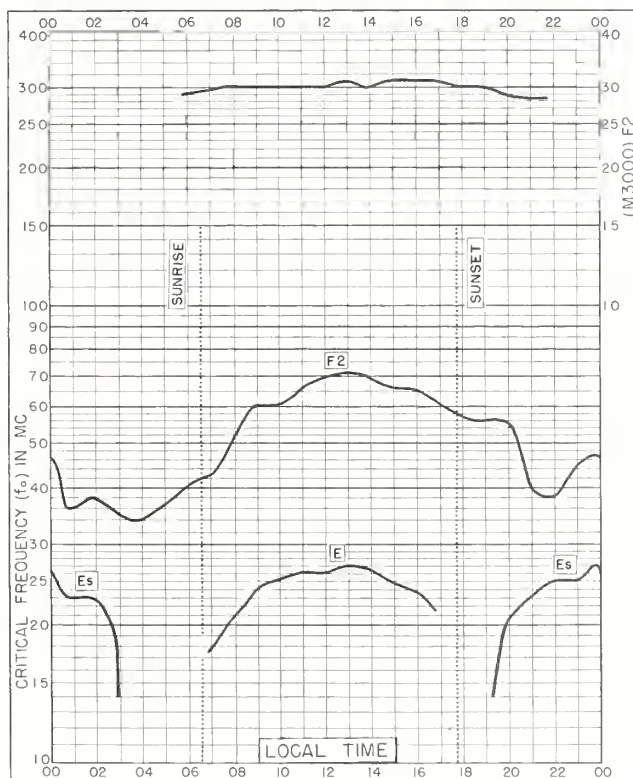


Fig. 11. SODANKYLÄ, FINLAND  
67.4°N, 26.6°E

MARCH 1961

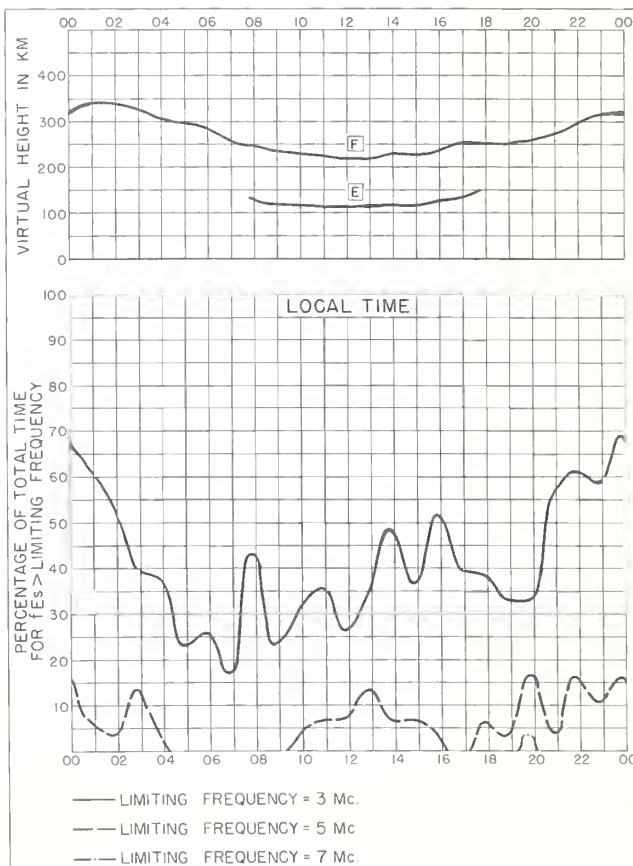
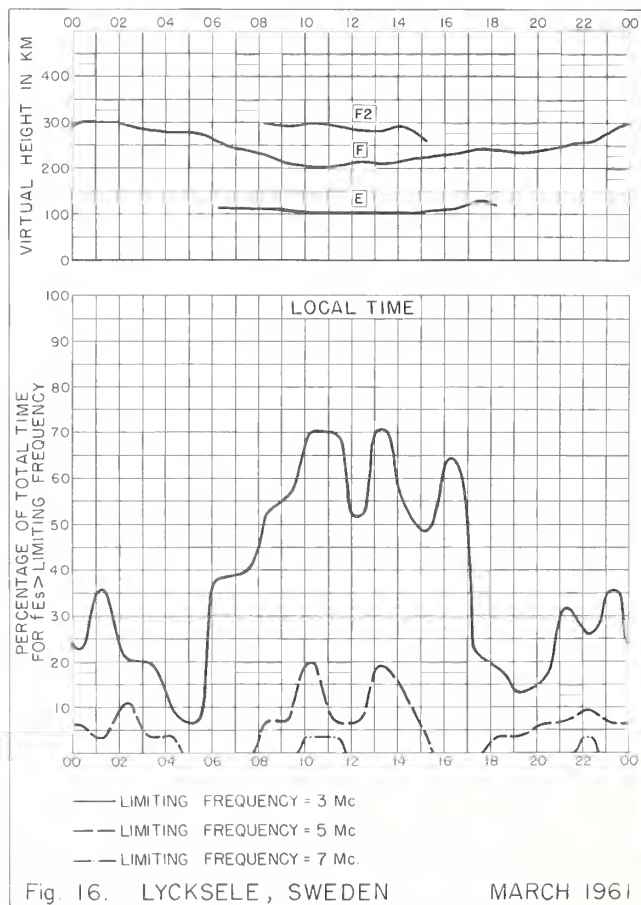
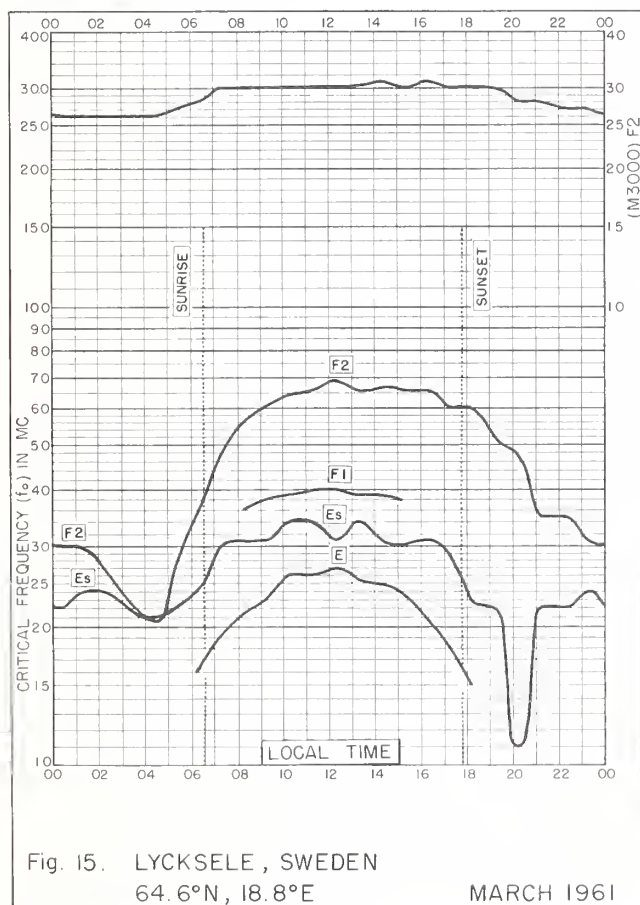
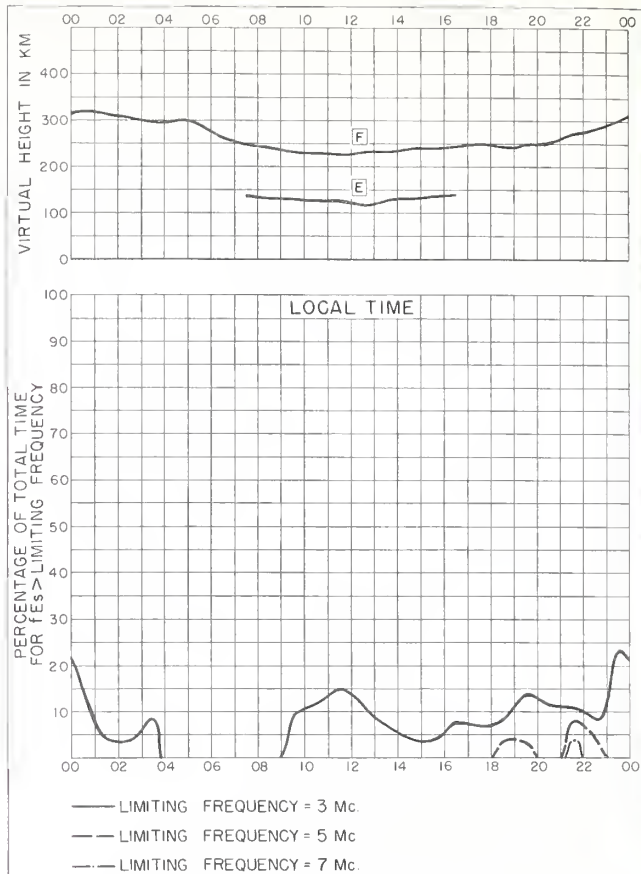
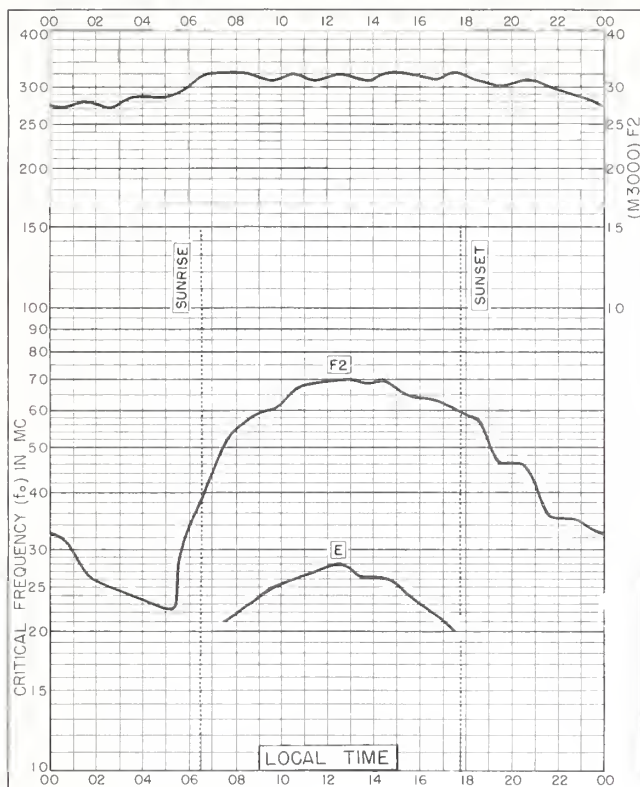


Fig. 12. SODANKYLÄ, FINLAND

MARCH 1961





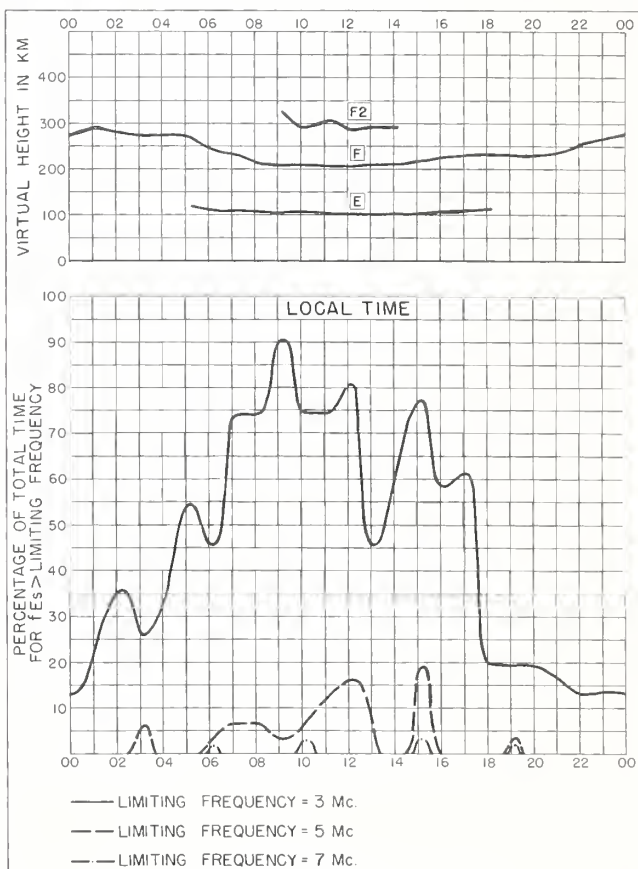
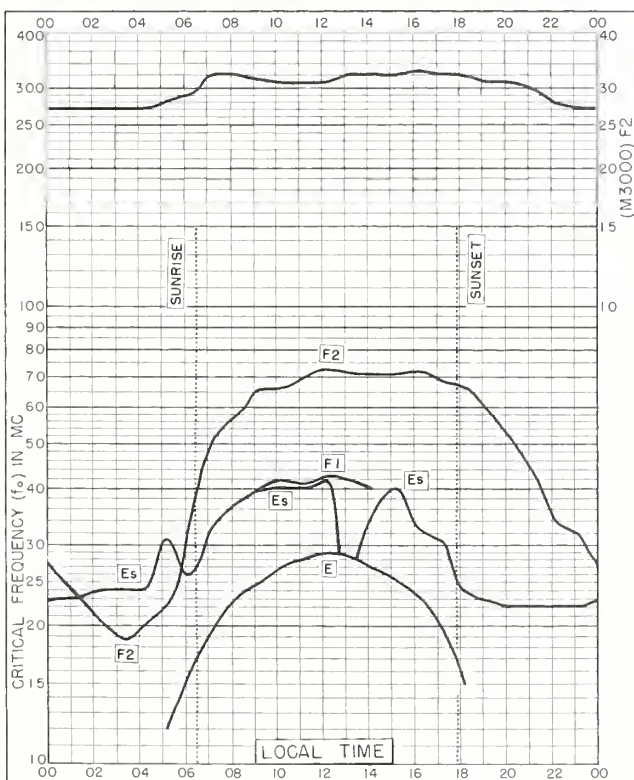
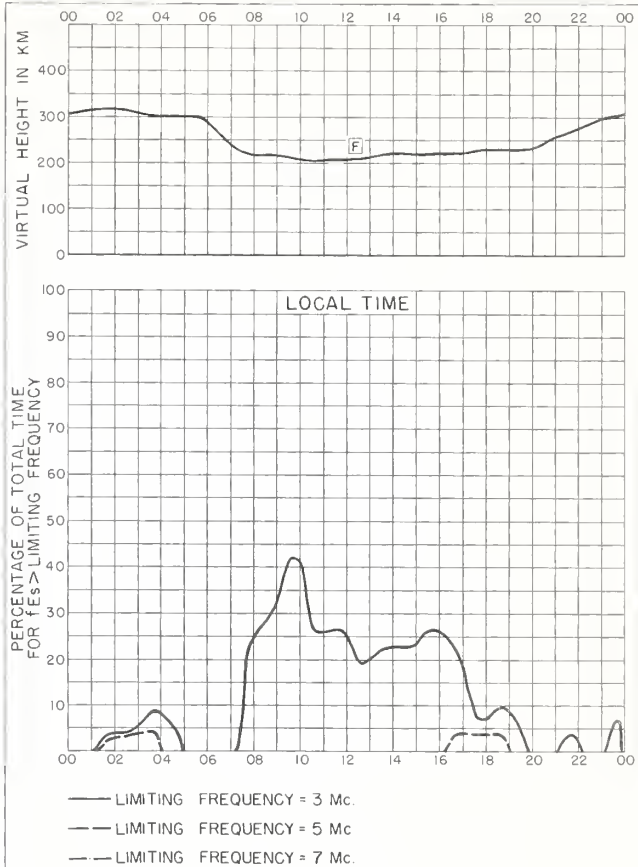
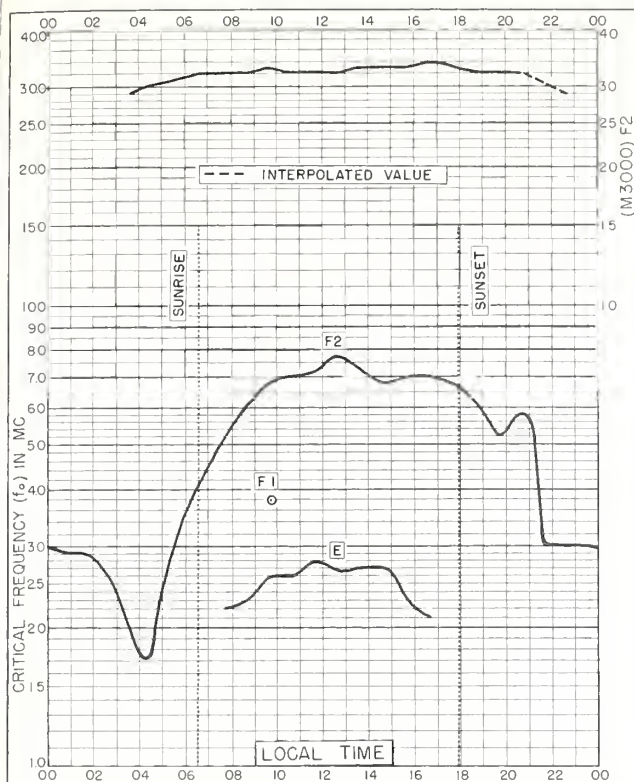




Fig. 21. CHURCHILL, CANADA  
58.8°N, 94.2°W

MARCH 1961

NBS 503

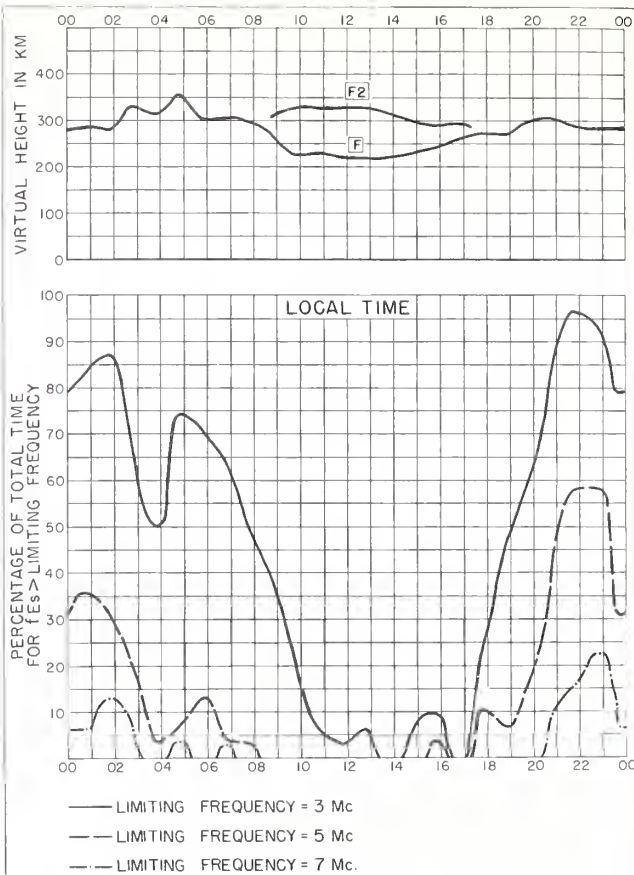


Fig. 22. CHURCHILL, CANADA

MARCH 1961

NBS 490

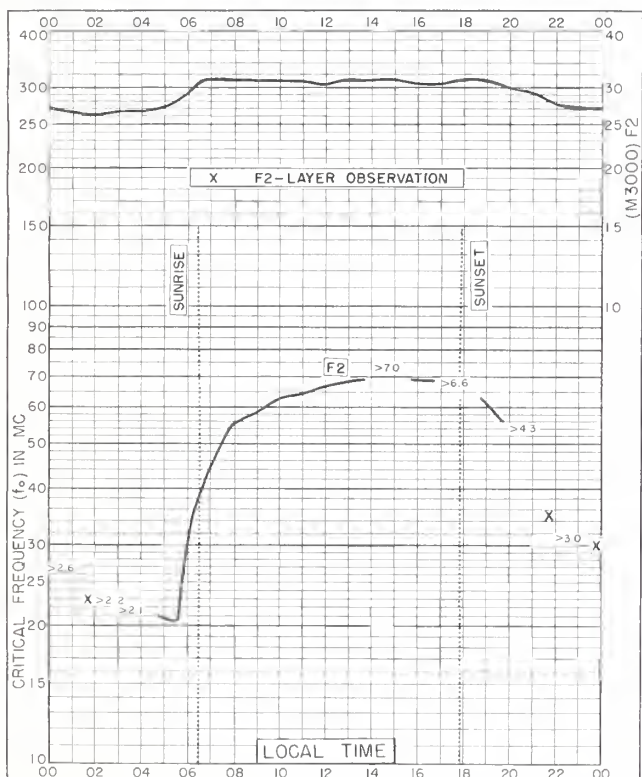


Fig. 23. INVERNESS, SCOTLAND  
57.4°N, 4.2°W

MARCH 1961

NBS 503

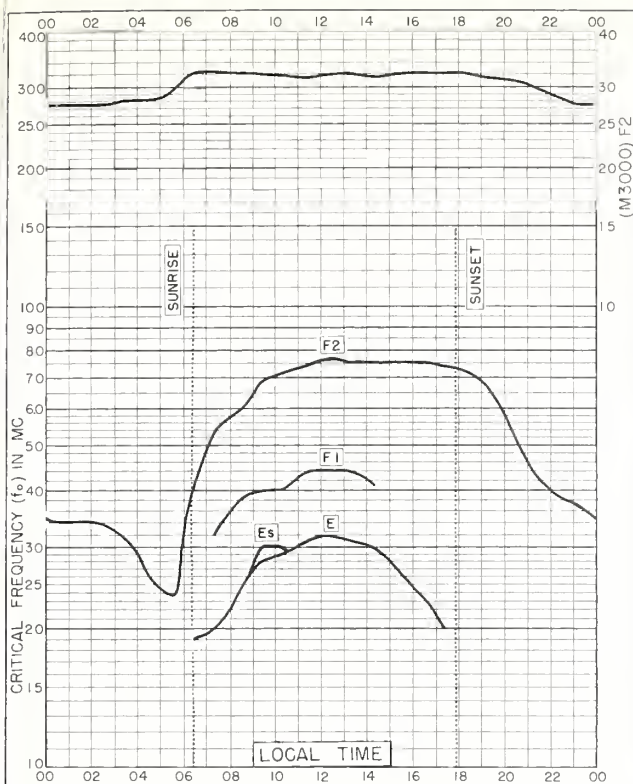


Fig. 24. De BILT, HOLLAND  
52.1°N, 5.2°E

MARCH 1961

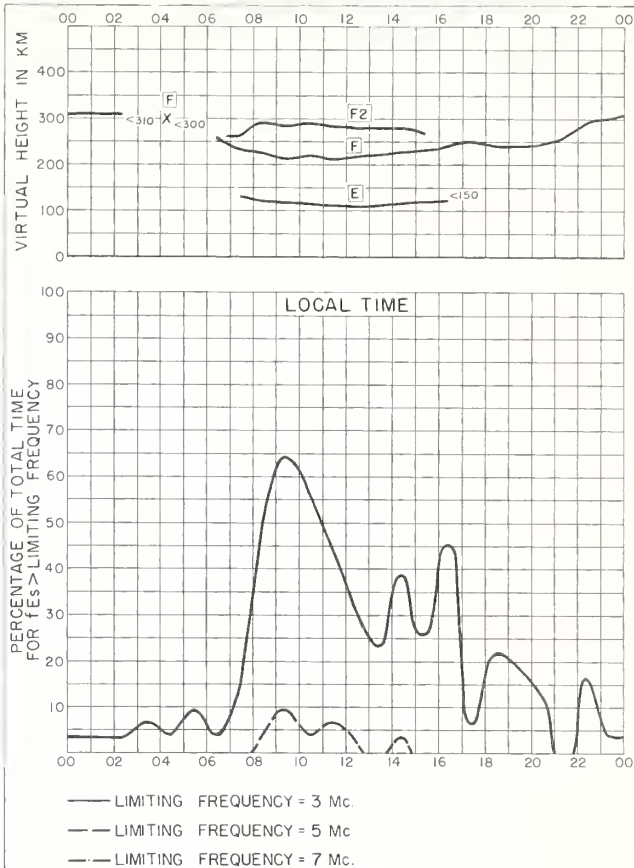


Fig. 25. De BILT, HOLLAND

MARCH 1961



Fig. 26. WINNIPEG, CANADA  
49.9°N, 97.4°W

MARCH 1961

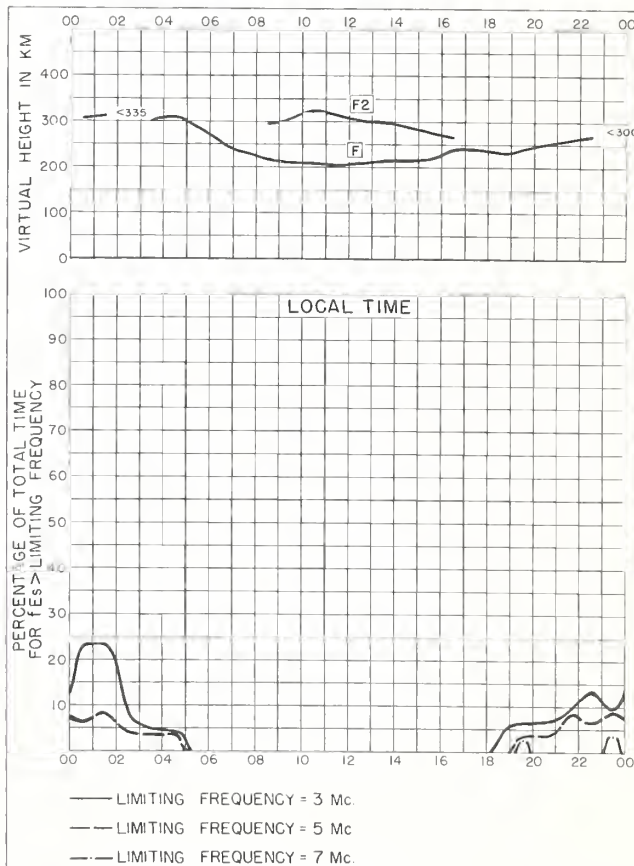


Fig. 27. WINNIPEG, CANADA

MARCH 1961



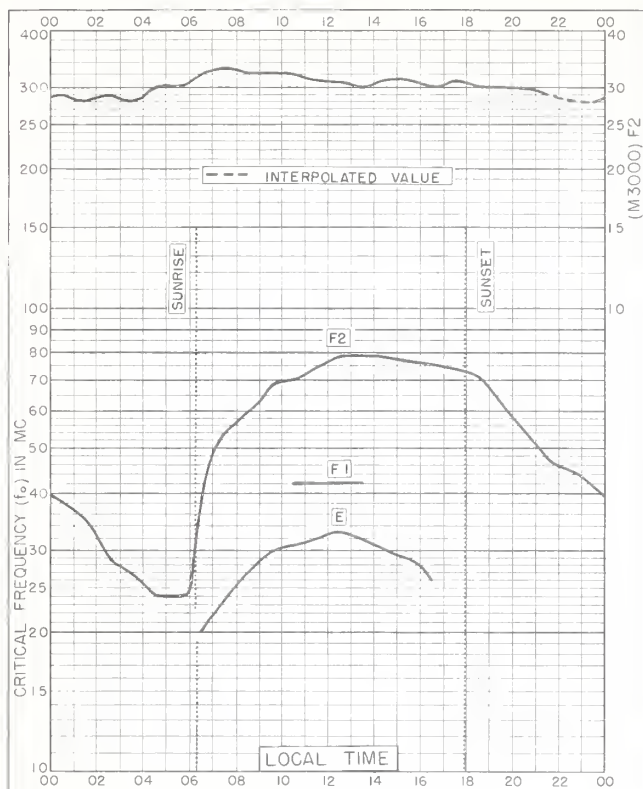


Fig. 28. ST. JOHN'S, NEWFOUNDLAND  
47.6°N, 52.7°W  
MARCH 1961

NBS 503

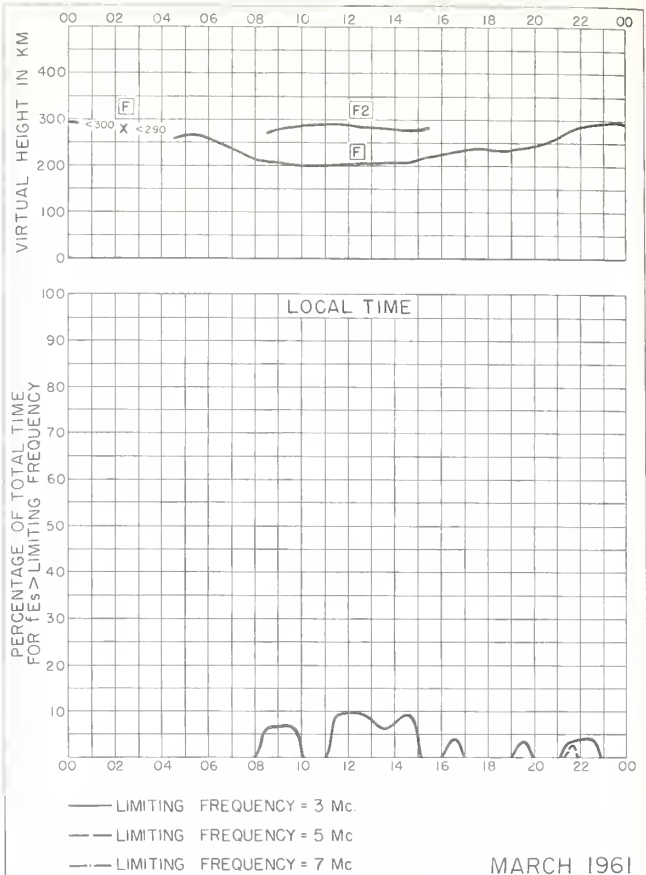


Fig. 29. ST. JOHN'S, NEWFOUNDLAND

MARCH 1961

NBS 490

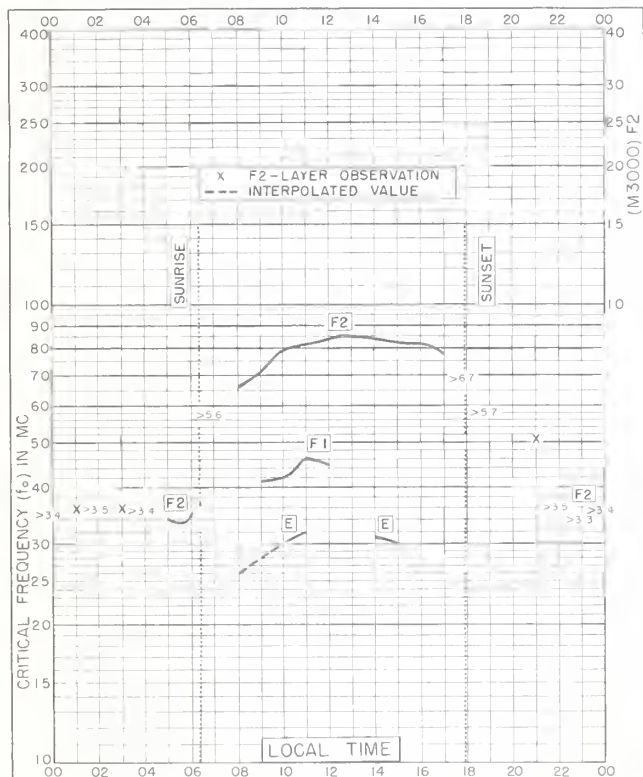


Fig. 30. GRAZ, AUSTRIA  
47.1°N, 15.5°E  
MARCH 1961

NBS 503

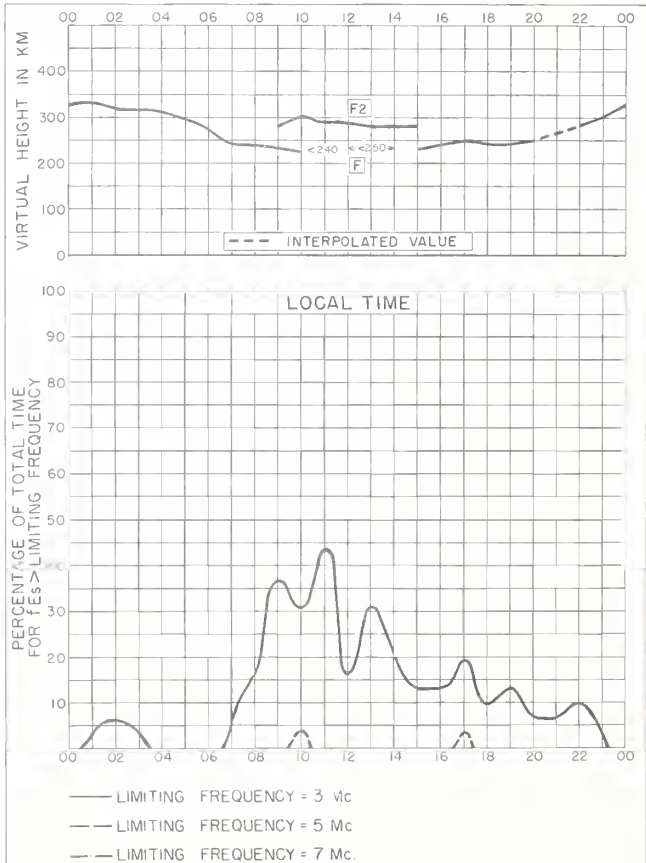


Fig. 31. GRAZ, AUSTRIA

MARCH 1961

NBS 490

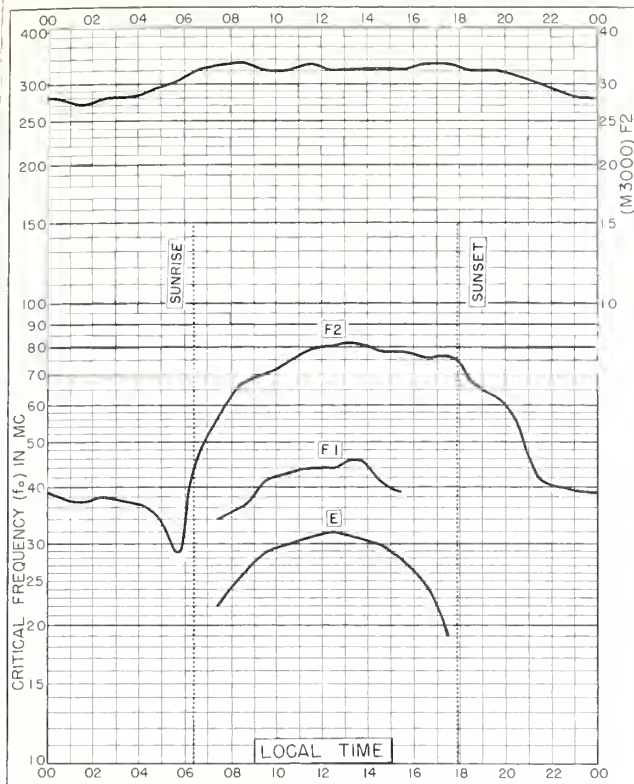


Fig. 32. SOTTENS, SWITZERLAND  
46.6°N, 6.7°E  
MARCH 1961

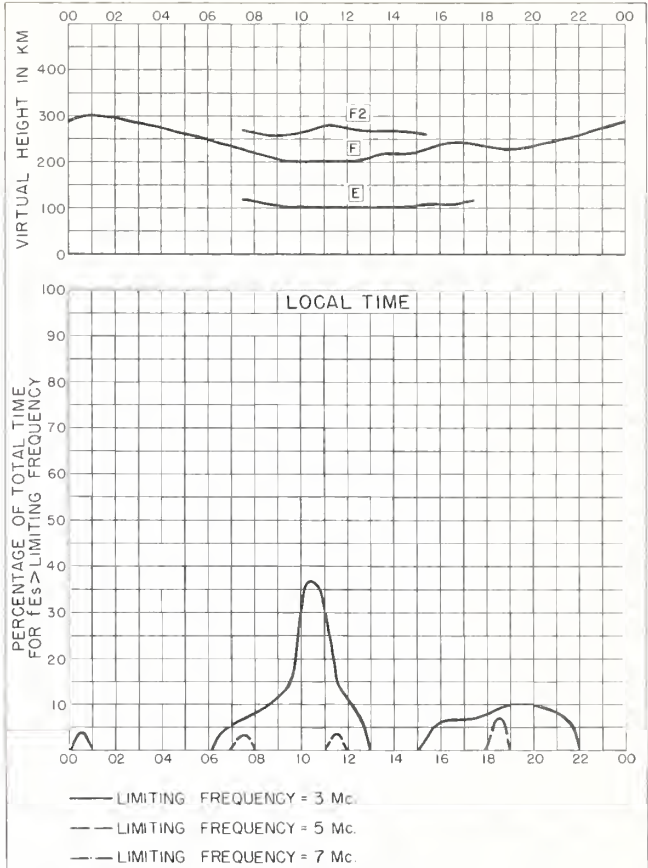


Fig. 33. SOTTENS, SWITZERLAND  
MARCH 1961

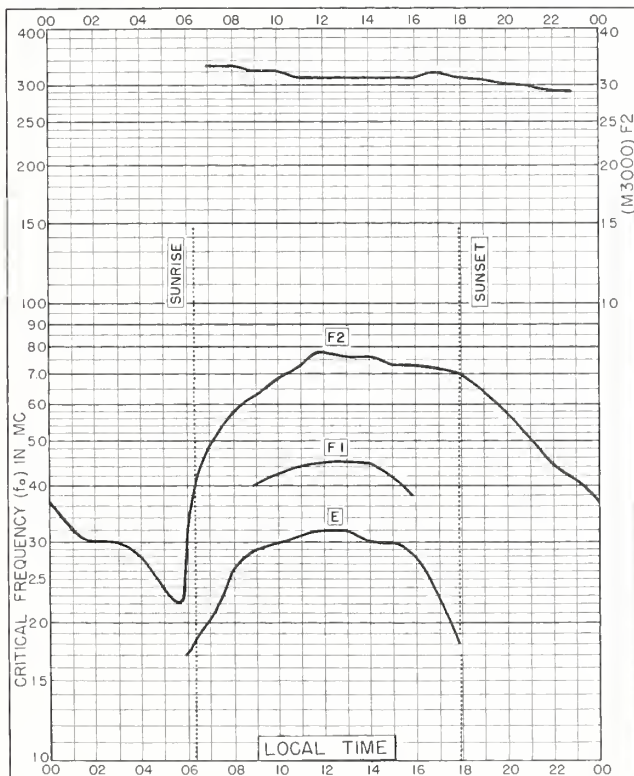


Fig. 34 OTTAWA, CANADA  
45.4°N, 75.9°W  
MARCH 1961

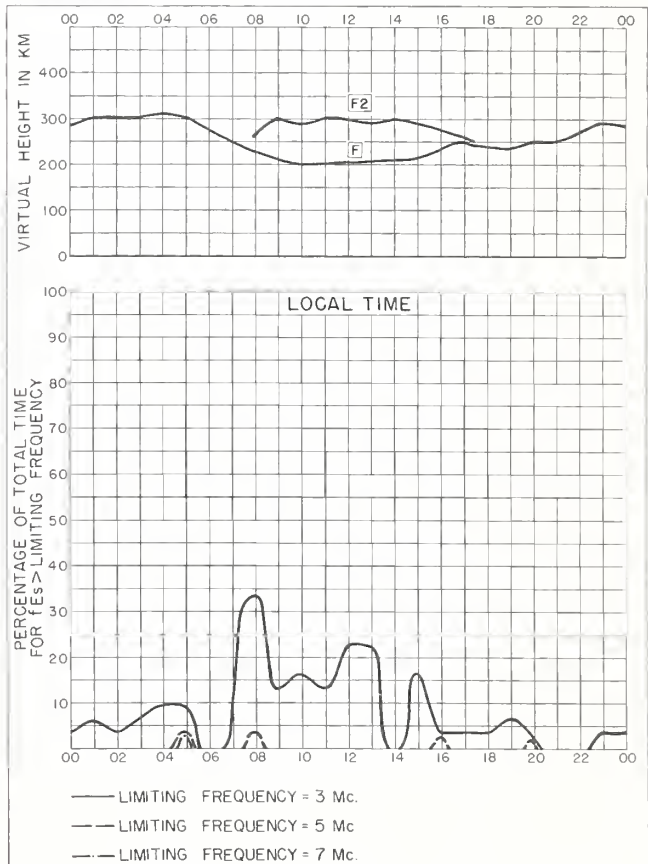


Fig. 35. OTTAWA, CANADA  
MARCH 1961

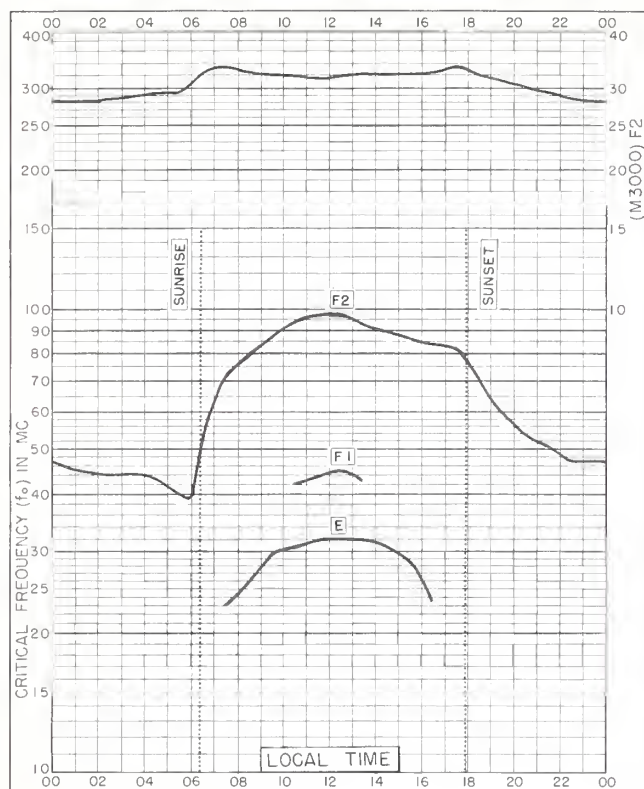


Fig. 36. WAKKANAI, JAPAN  
45.4°N, 141.7°E

MARCH 1961

NBS 503

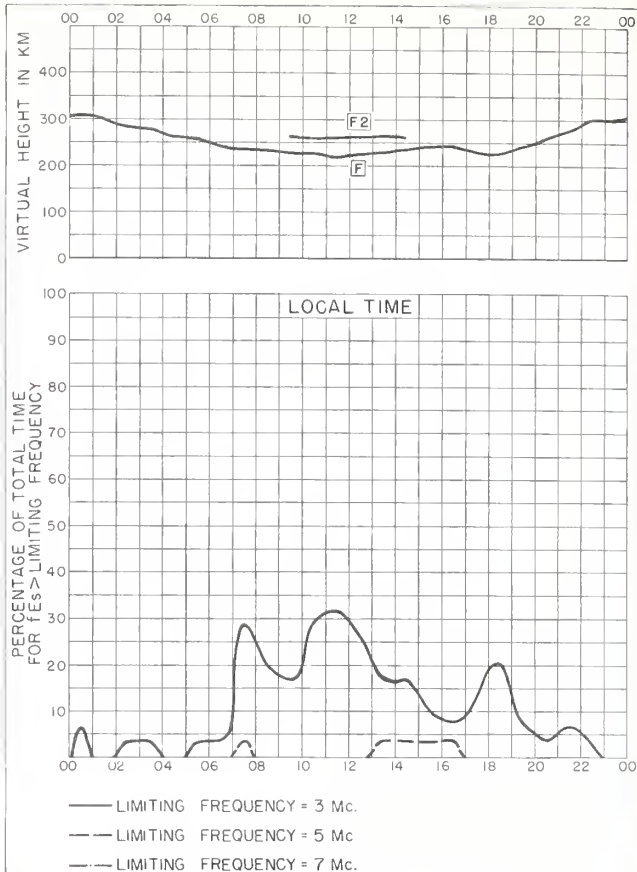


Fig. 37. WAKKANAI, JAPAN

MARCH 1961

NBS 490

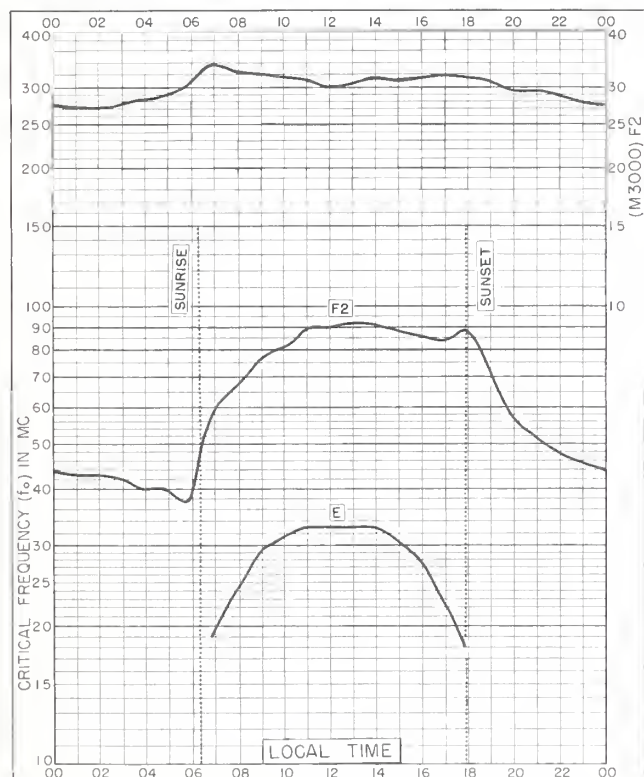


Fig. 38. ROME, ITALY  
41.8°N, 12.5°E

MARCH 1961

NBS 503

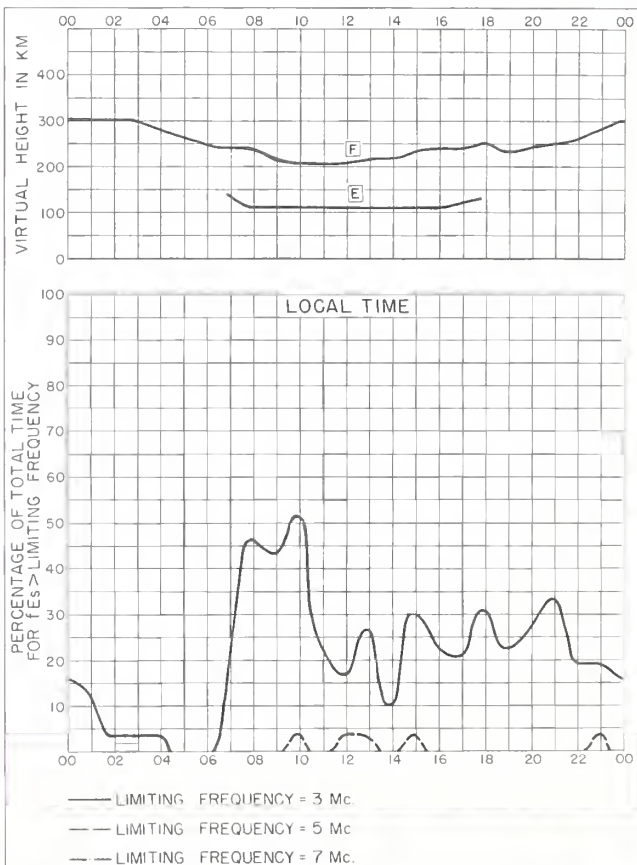


Fig. 39. ROME, ITALY

MARCH 1961

NBS 490



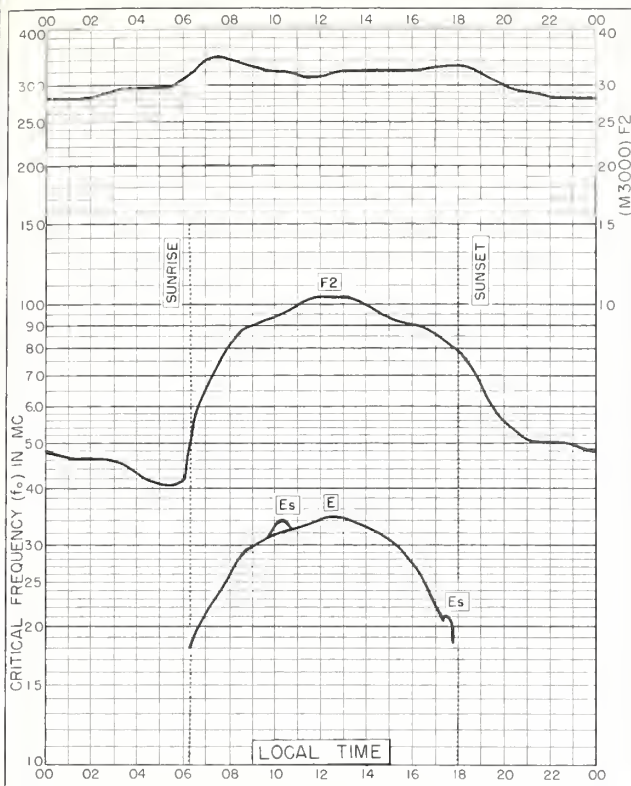


Fig. 40. AKITA, JAPAN  
39.7°N, 140.1°E

MARCH 1961

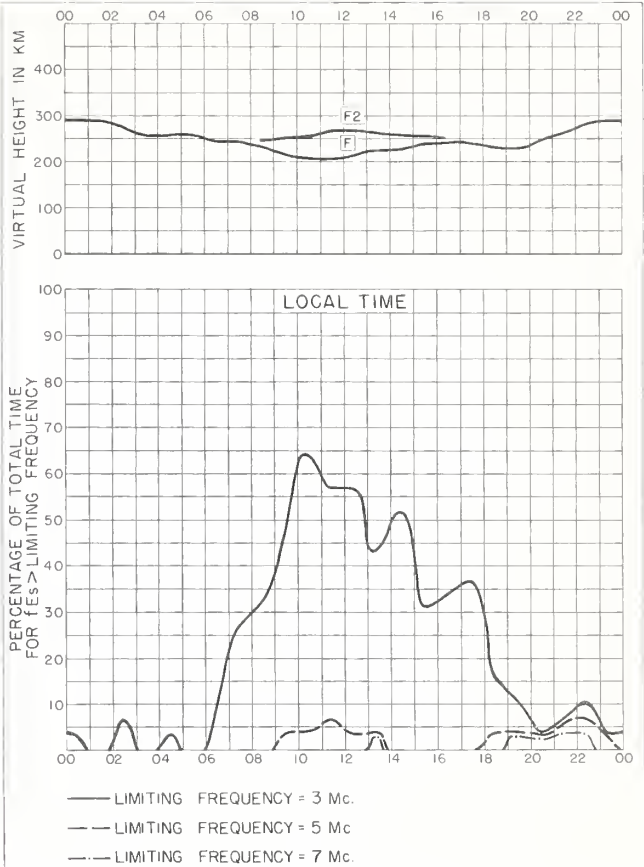


Fig. 41. AKITA, JAPAN

MARCH 1961

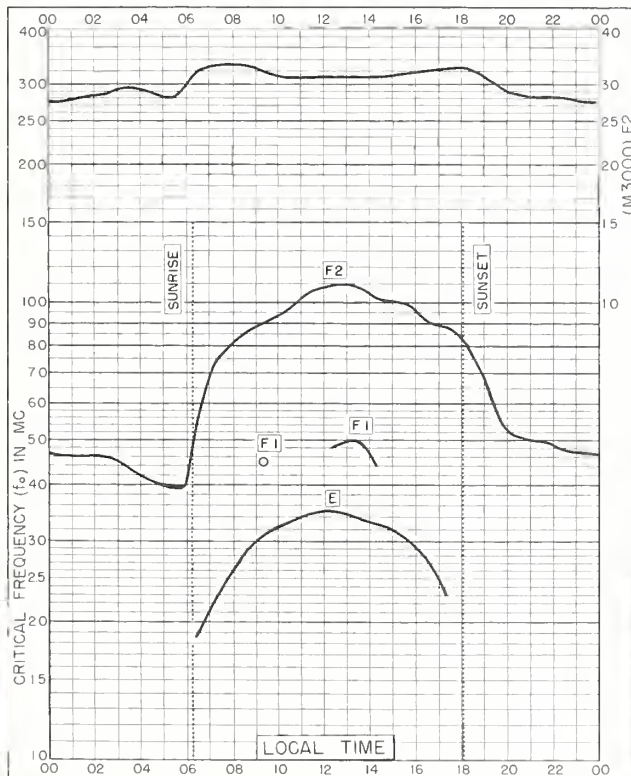


Fig. 42. TOKYO, JAPAN  
35.7°N, 139.5°E

MARCH 1961

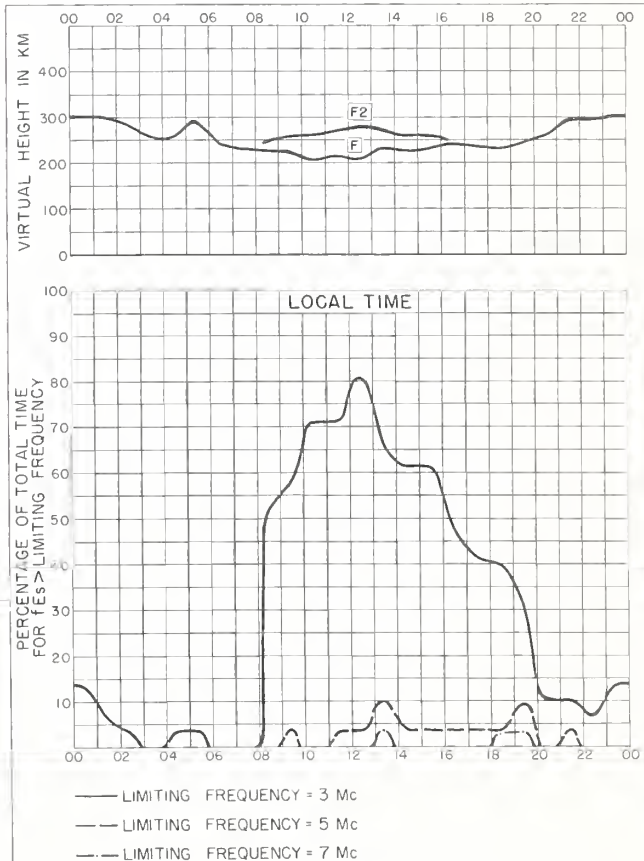


Fig. 43. TOKYO, JAPAN

MARCH 1961

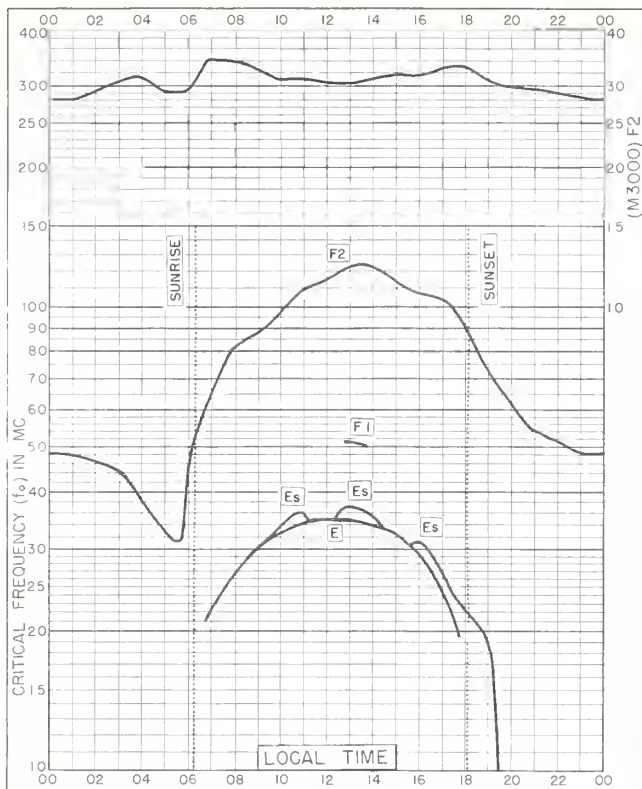


Fig. 44. YAMAGAWA, JAPAN  
31.2°N, 130.6°E

MARCH 1961

NBS 503

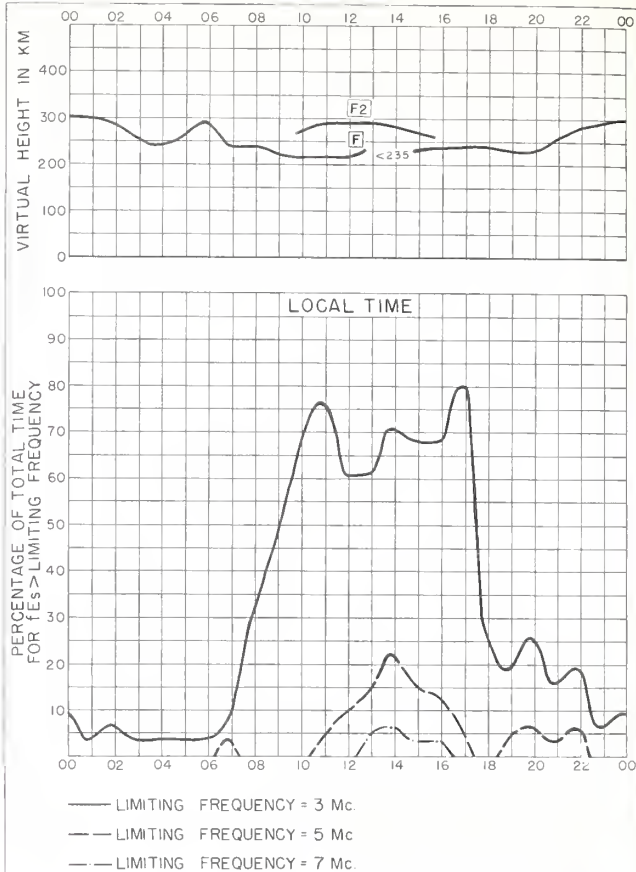


Fig. 45. YAMAGAWA, JAPAN

MARCH 1961

NBS 490

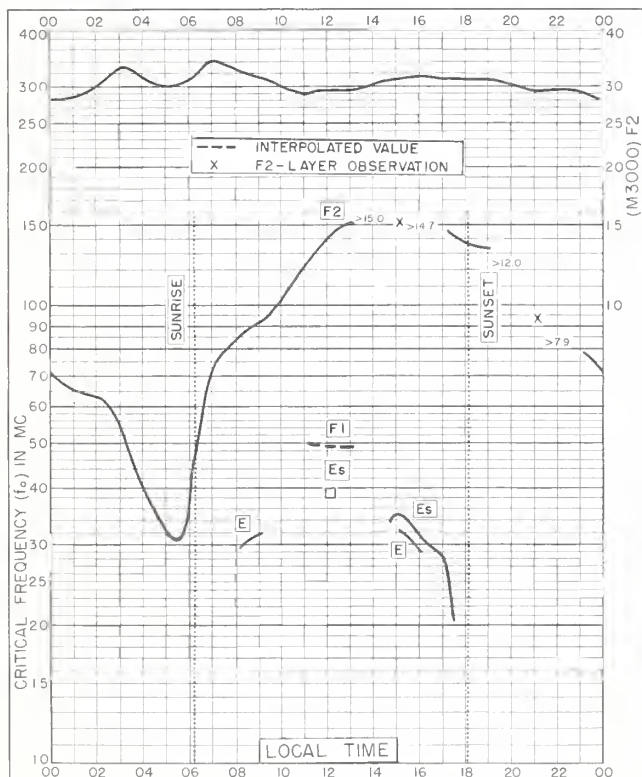


Fig. 46. FORMOSA, CHINA  
25.0°N, 121.5°E

MARCH 1961

NBS 503

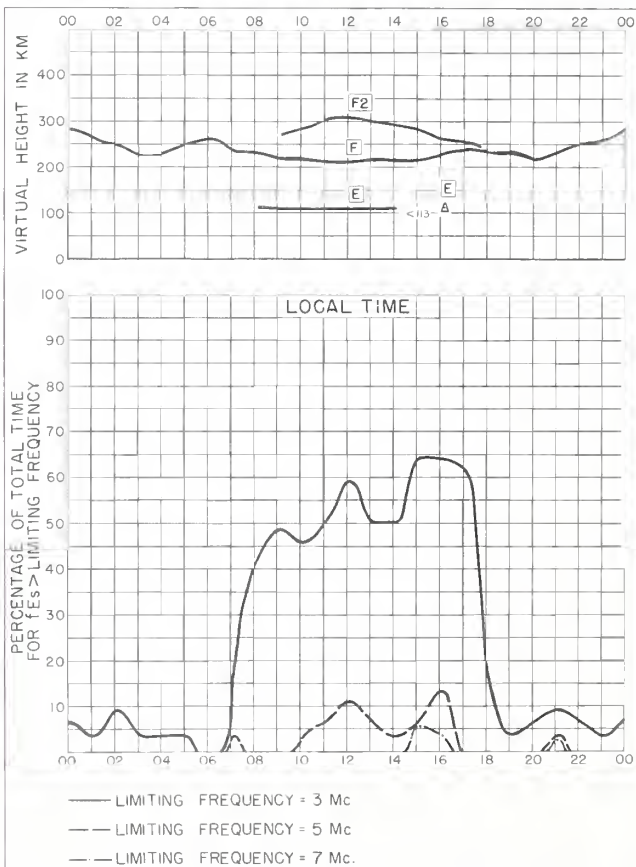


Fig. 47. FORMOSA, CHINA

MARCH 1961

NBS 490

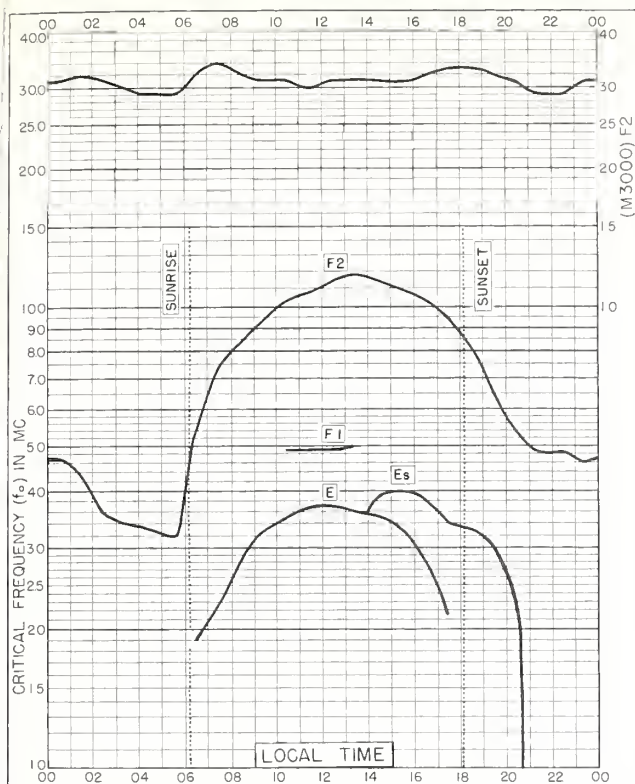
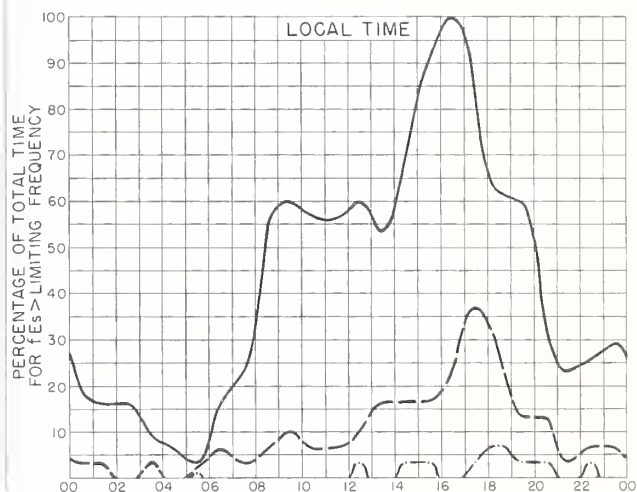
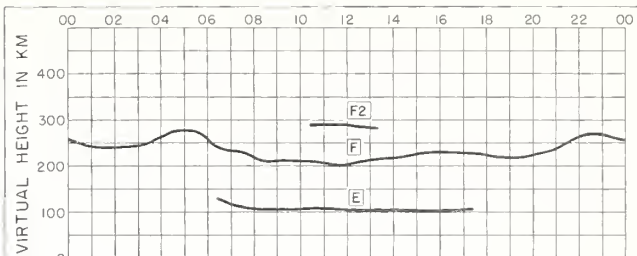


Fig. 48. EL CERILLO, MEXICO  
19.3°N, 99.5°W

MARCH 1961



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc  
- · - · - LIMITING FREQUENCY = 7 Mc

Fig. 49. EL CERILLO, MEXICO

MARCH 1961

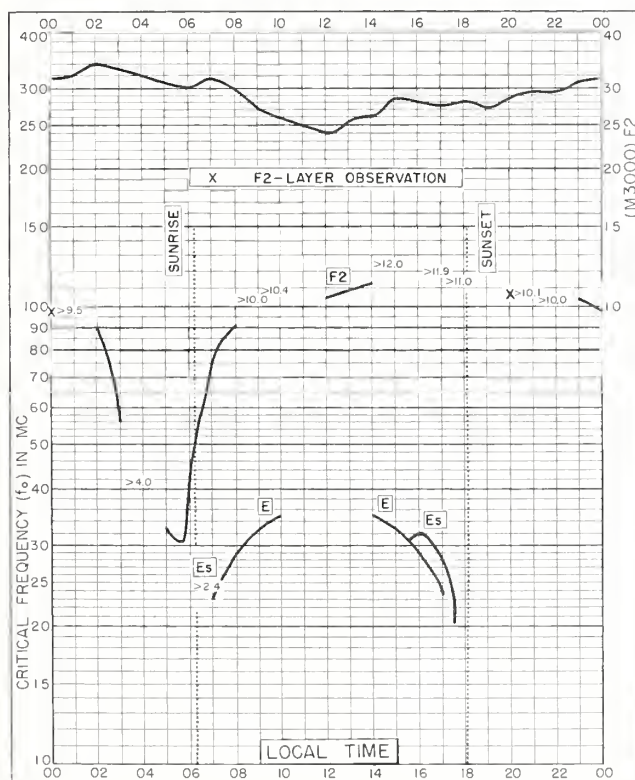
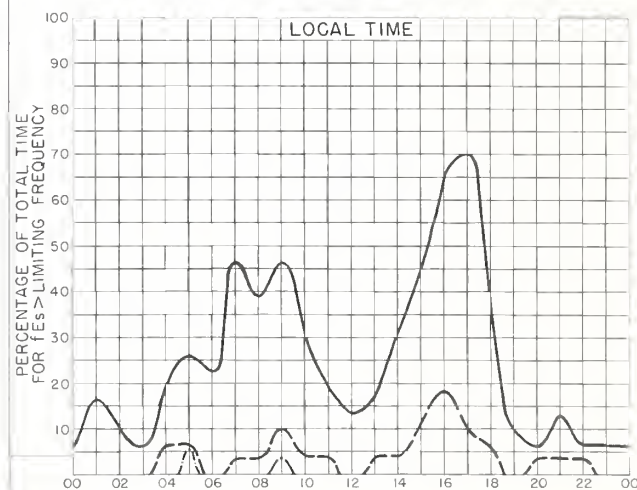
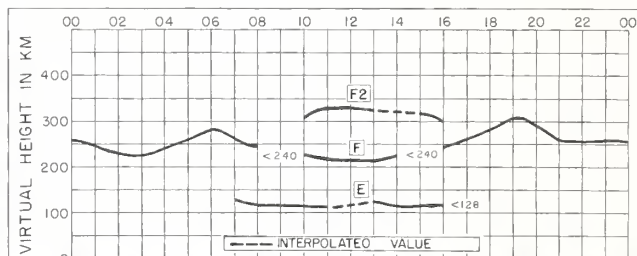


Fig. 50. BAGUIO, P. I.  
16.4°N, 120.6°E

MARCH 1961



— LIMITING FREQUENCY = 3 Mc.  
- - - LIMITING FREQUENCY = 5 Mc  
- · - · - LIMITING FREQUENCY = 7 Mc

Fig. 51. BAGUIO, P. I.

MARCH 1961



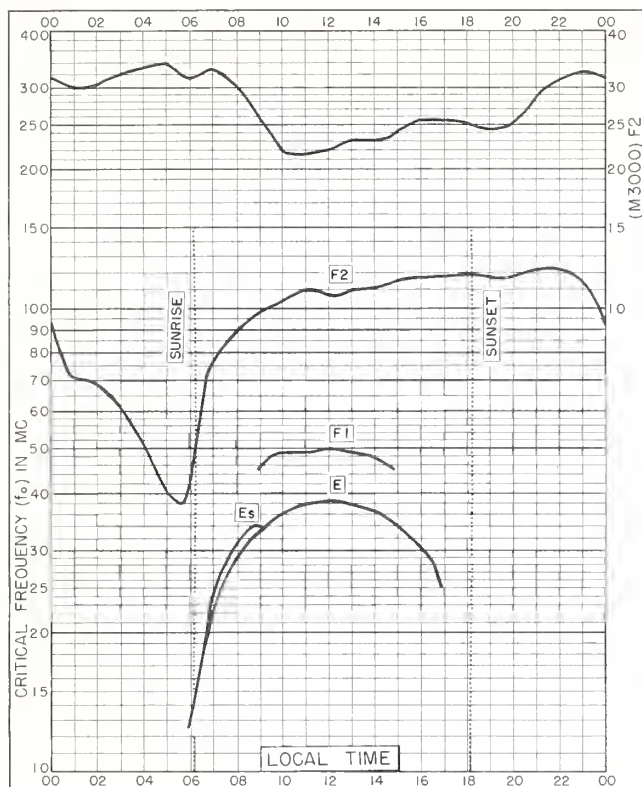


Fig. 52. SINGAPORE, BRITISH MALAYA  
1.3°N, 103.8°E  
MARCH 1961

NBS 503

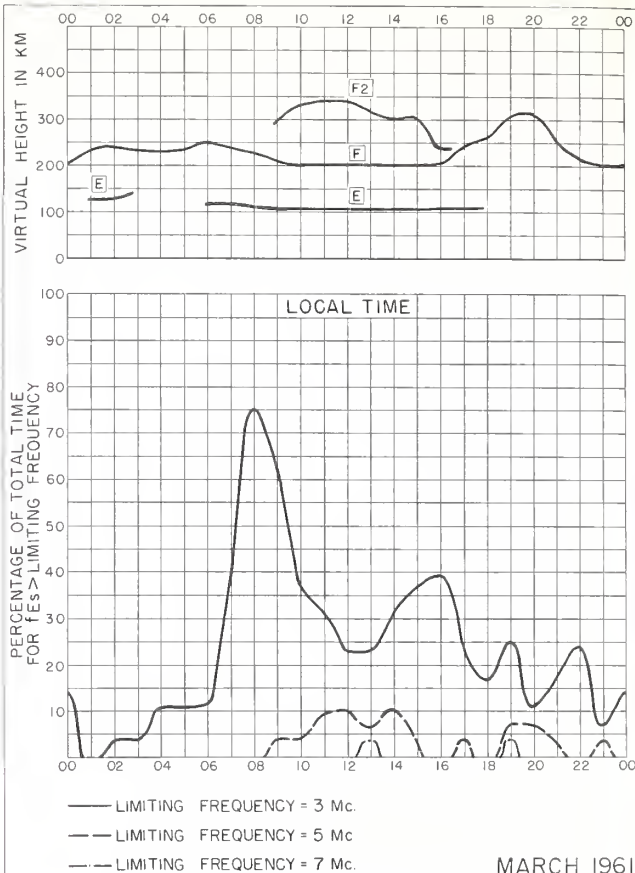


Fig. 53. SINGAPORE, BRITISH MALAYA

MARCH 1961

NBS 490

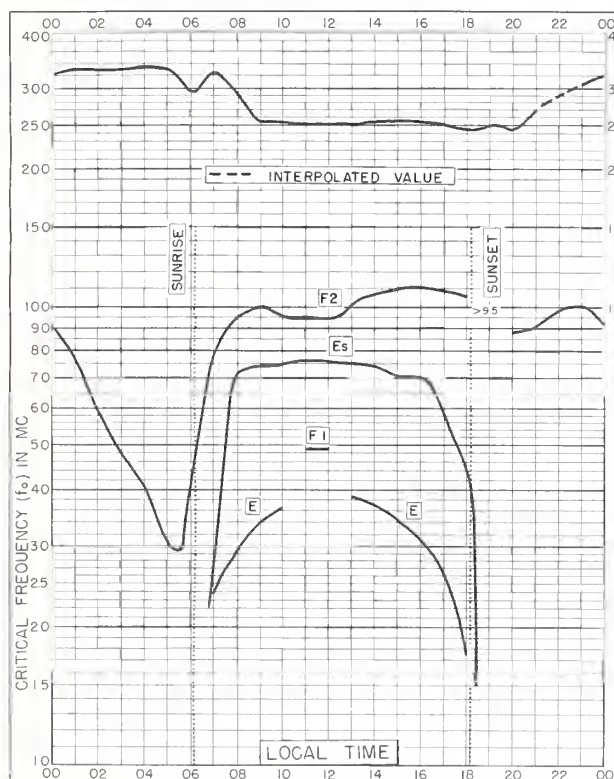


Fig. 54. HUANCAYO, PERU  
12.0°S, 75.3°W  
MARCH 1961

NBS 503

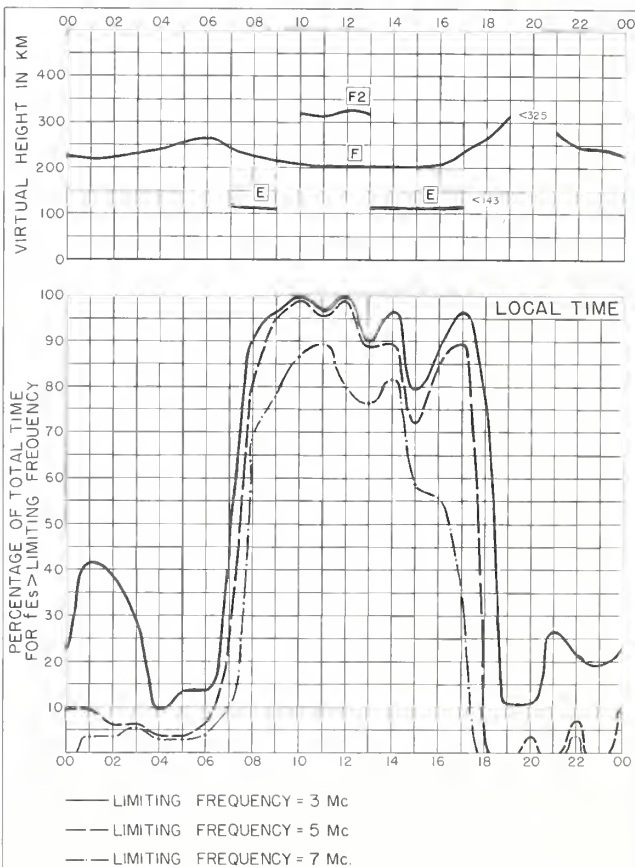
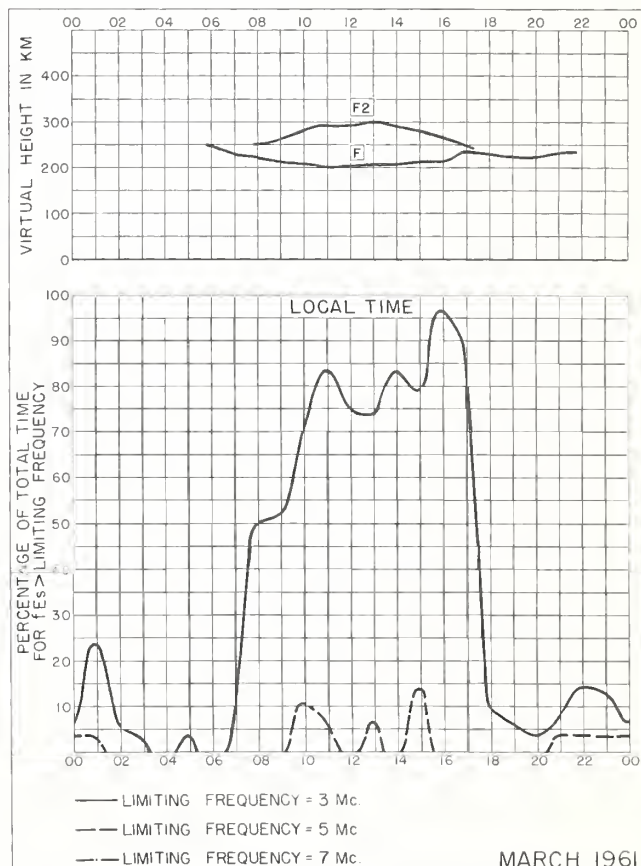
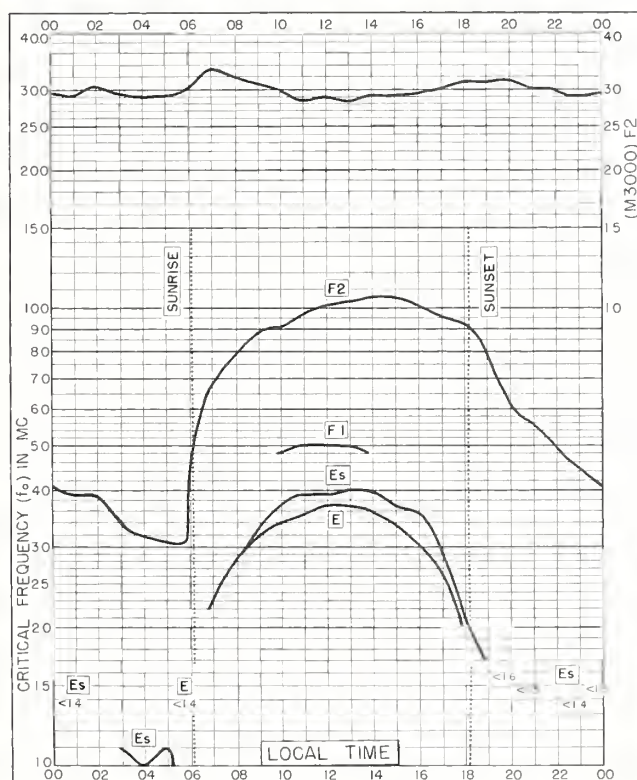
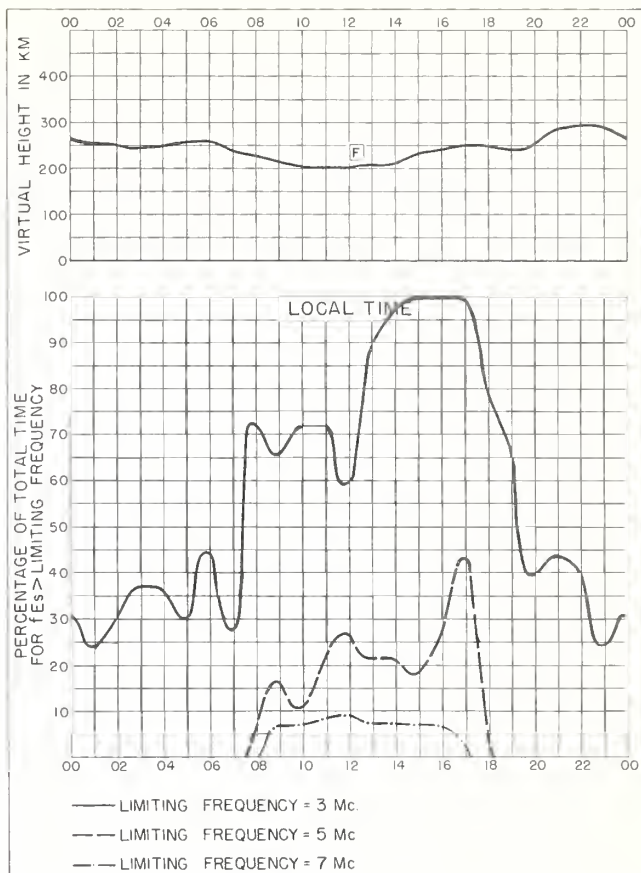
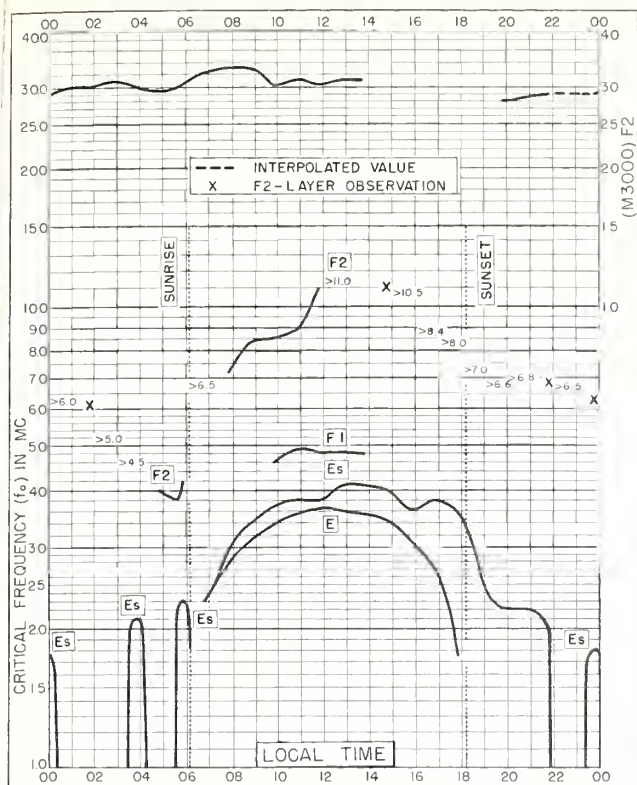


Fig. 55. HUANCAYO, PERU

MARCH 1961

NBS 490





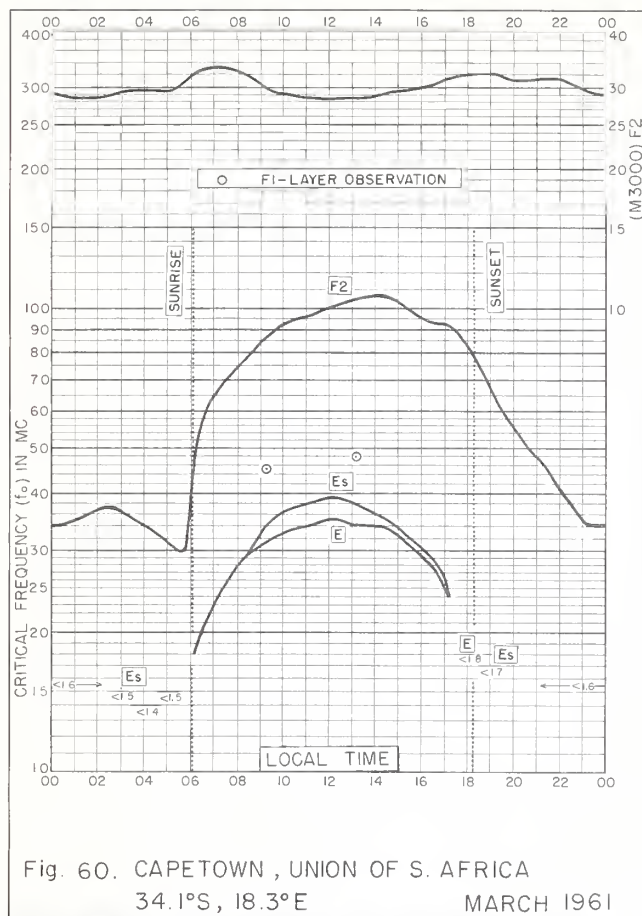


Fig. 60. CAPETOWN, UNION OF S. AFRICA  
34.1°S, 18.3°E  
MARCH 1961

NBS 503

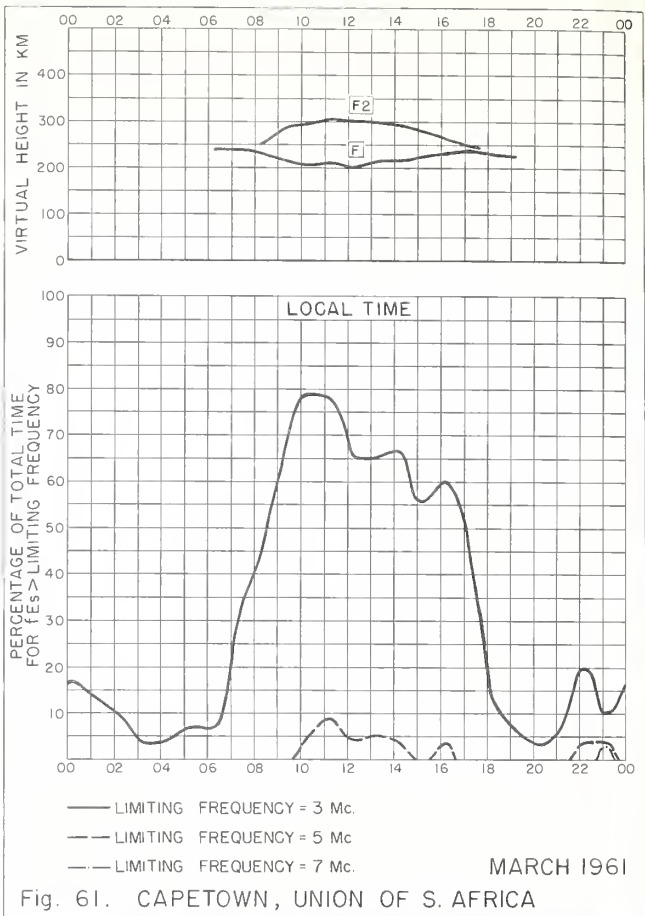


Fig. 61. CAPETOWN, UNION OF S. AFRICA

NBS 490

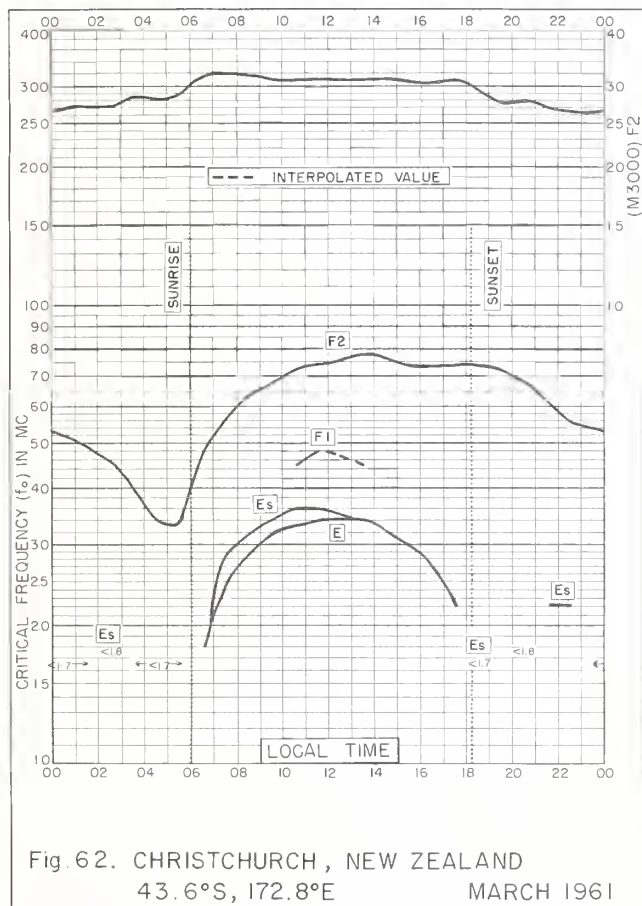


Fig. 62. CHRISTCHURCH, NEW ZEALAND  
43.6°S, 172.8°E  
MARCH 1961

NBS 503

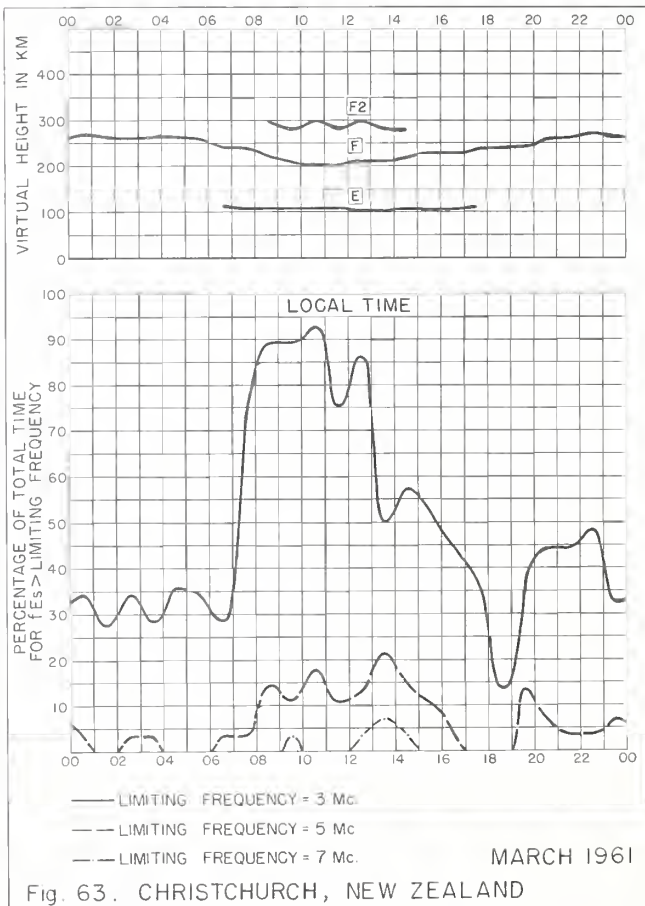


Fig. 63. CHRISTCHURCH, NEW ZEALAND

NBS 490



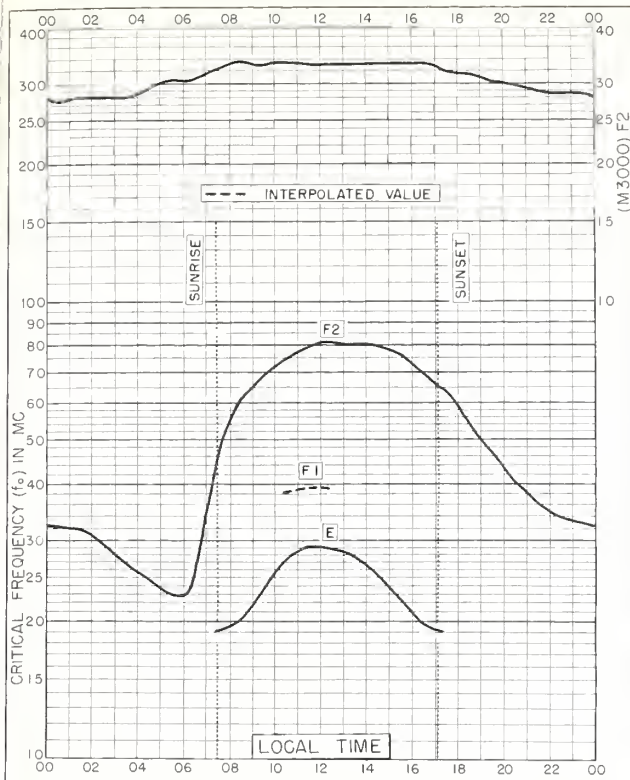


Fig. 64. De BILT, HOLLAND  
52.1°N, 5.2°E

FEBRUARY 1961

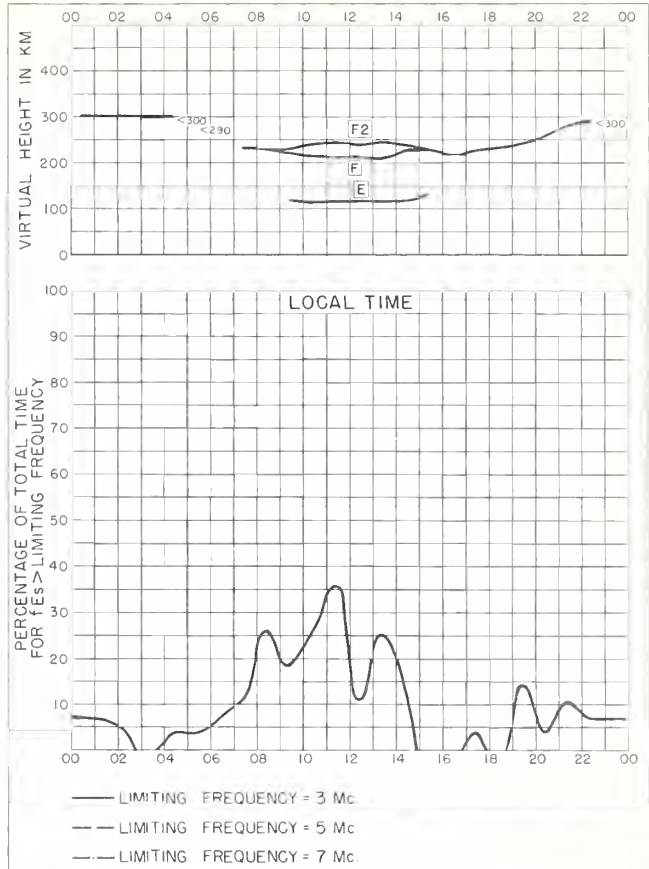


Fig. 65. De BILT, HOLLAND

FEBRUARY 1961

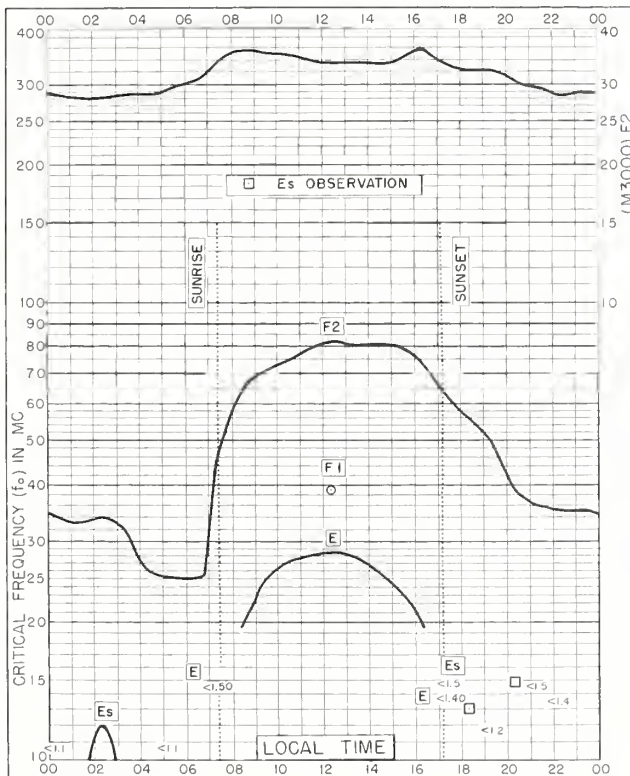


Fig. 66. DOUBES, BELGIUM  
50.1°N, 4.6°E

FEBRUARY 1961

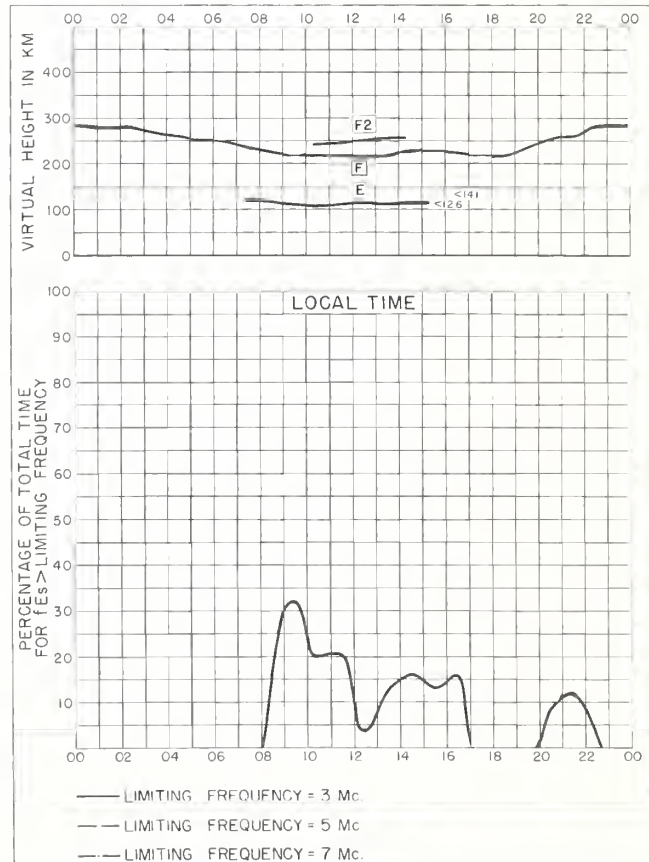
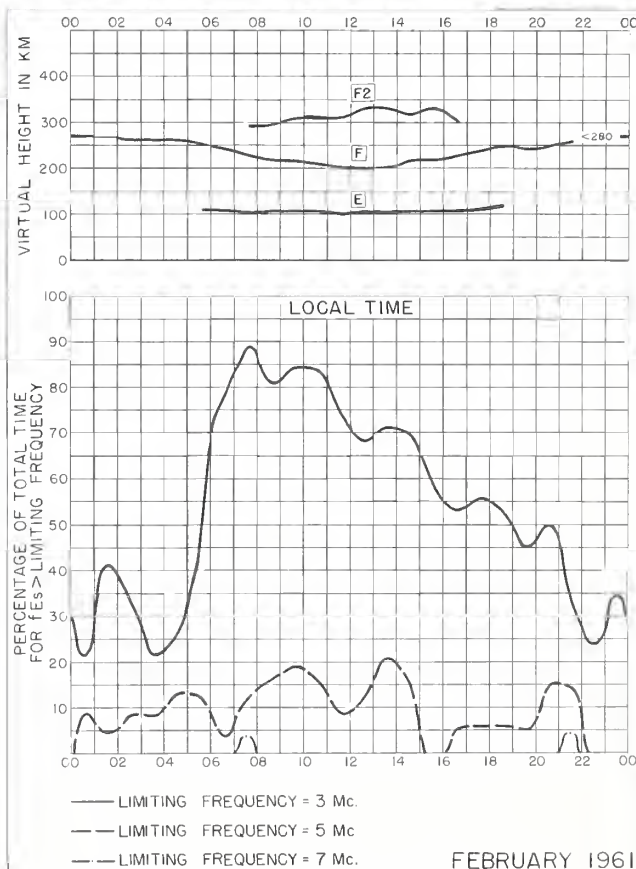
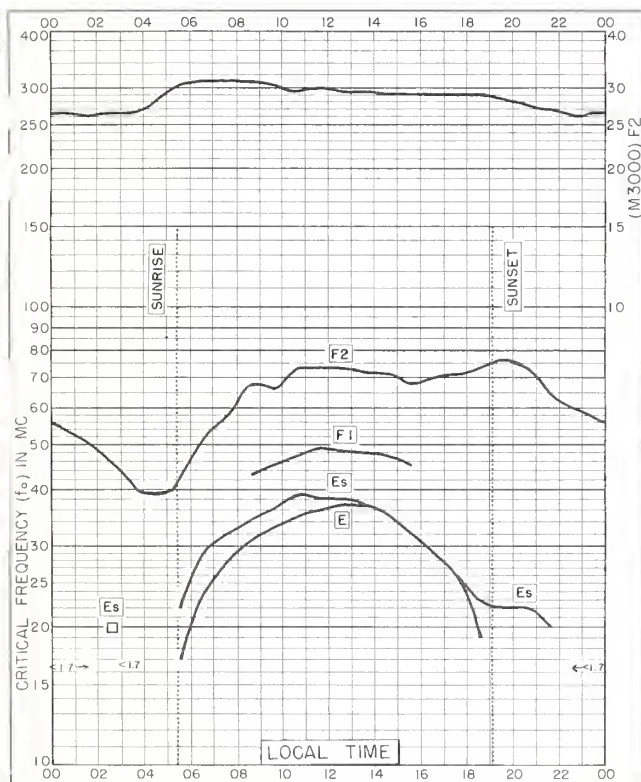
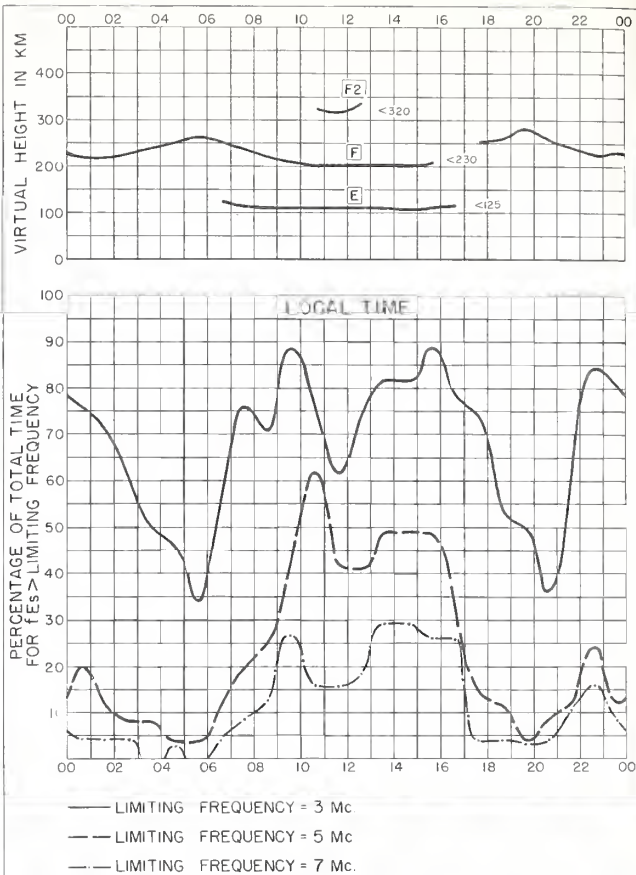
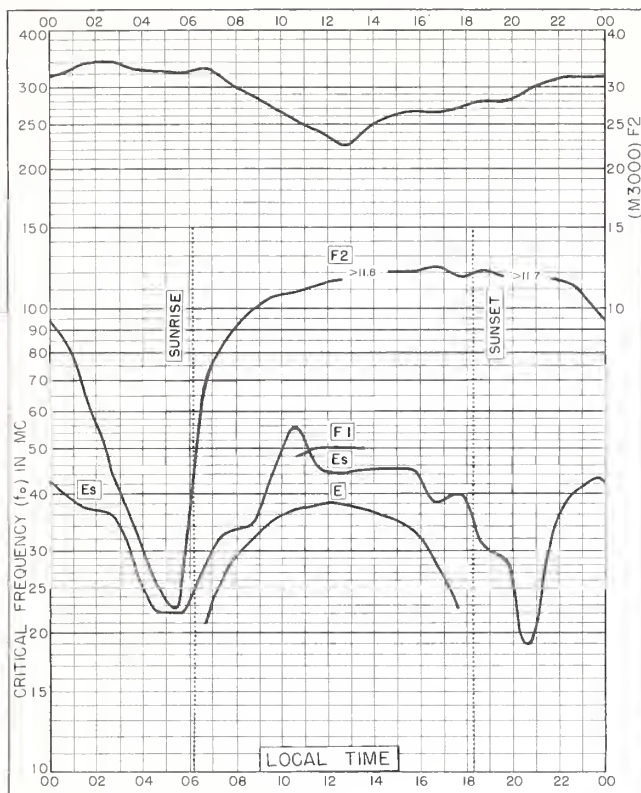


Fig. 67. DOUBES, BELGIUM

FEBRUARY 1961





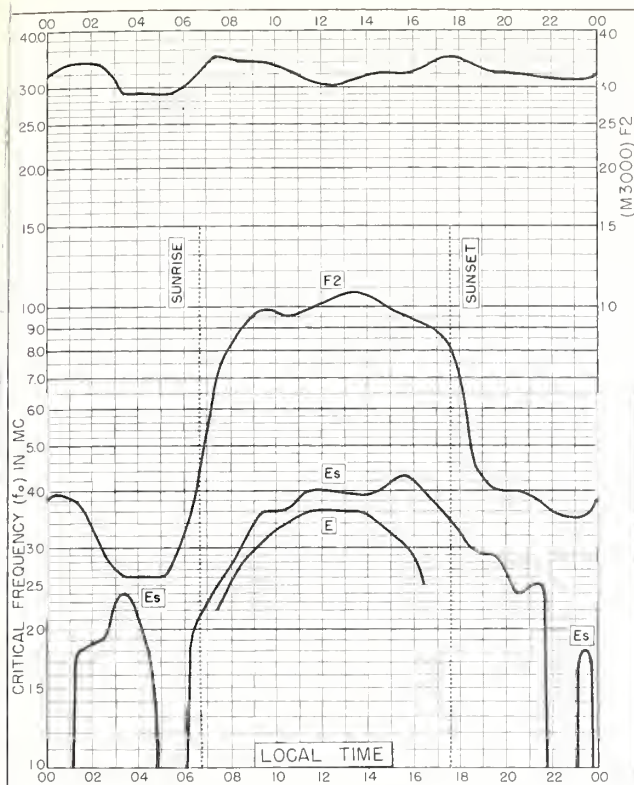


Fig. 72. EL CERILLO, MEXICO  
19.3°N, 99.5°W

JANUARY 1961

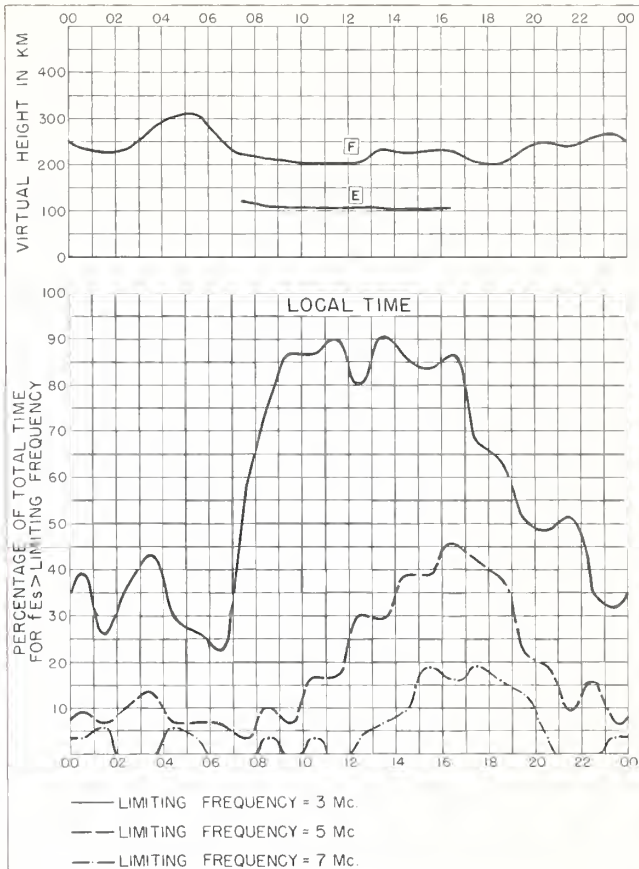


Fig. 73. EL CERILLO, MEXICO

JANUARY 1961



Fig. 74. TALARA, PERU  
4.6°S, 81.3°W

JANUARY 1961

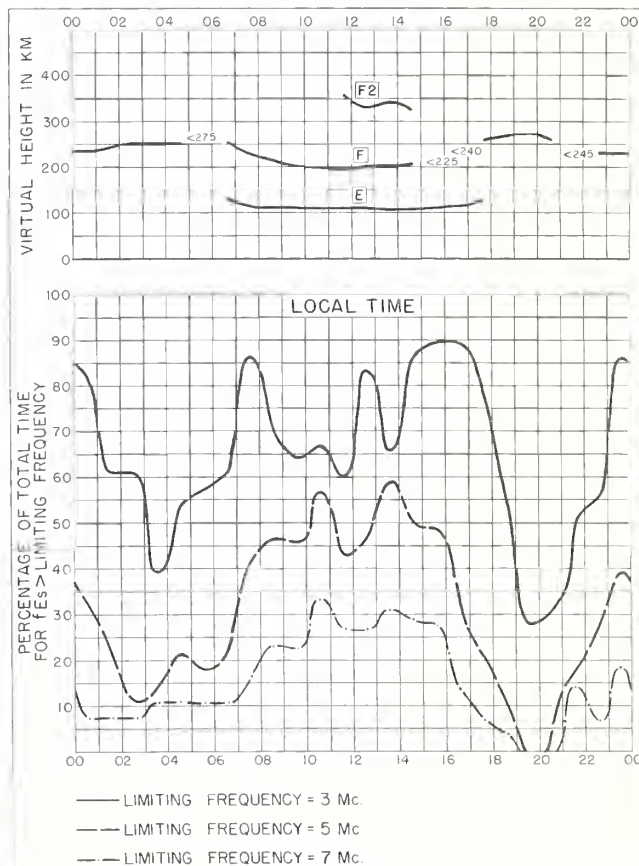


Fig. 75. TALARA, PERU

JANUARY 1961

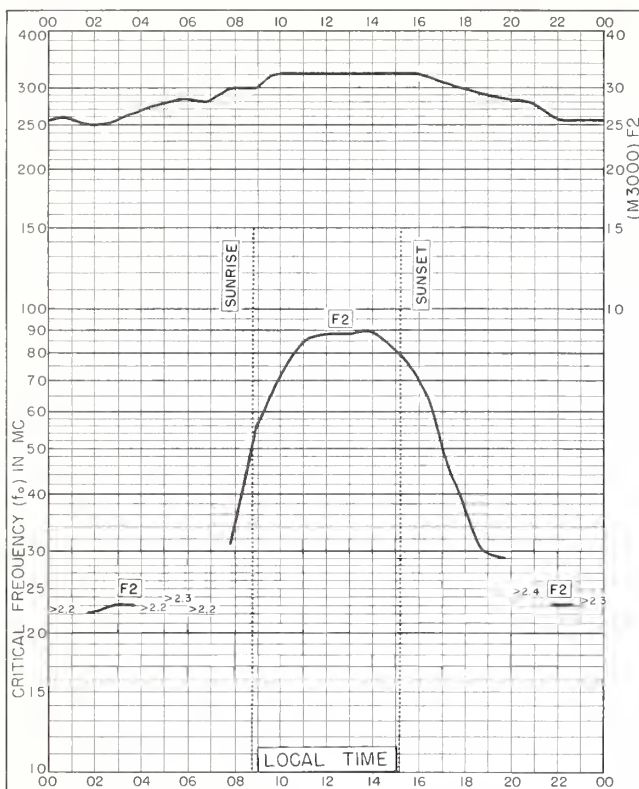


Fig. 76. INVERNESS, SCOTLAND

57.4°N, 4.2°W

DECEMBER 1960

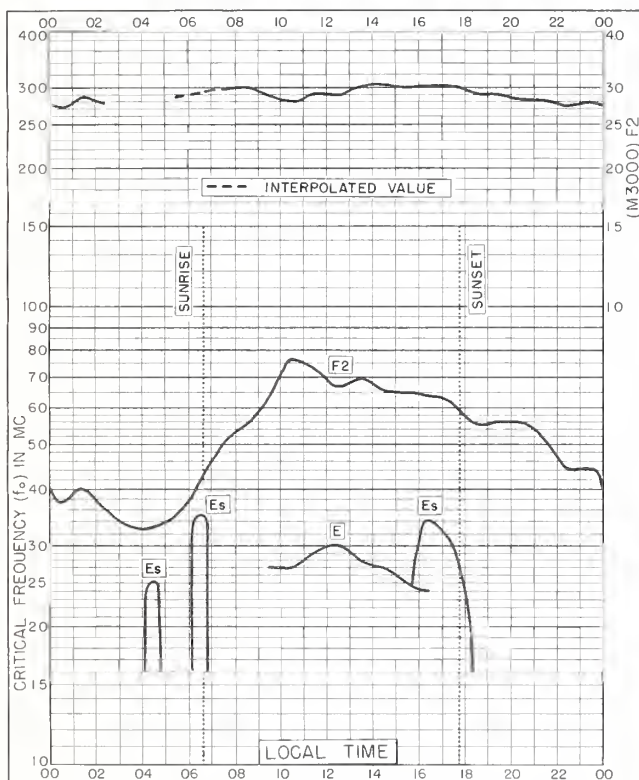


Fig. 77. GODHAVN, GREENLAND

69.3°N, 53.5°W

MARCH 1960

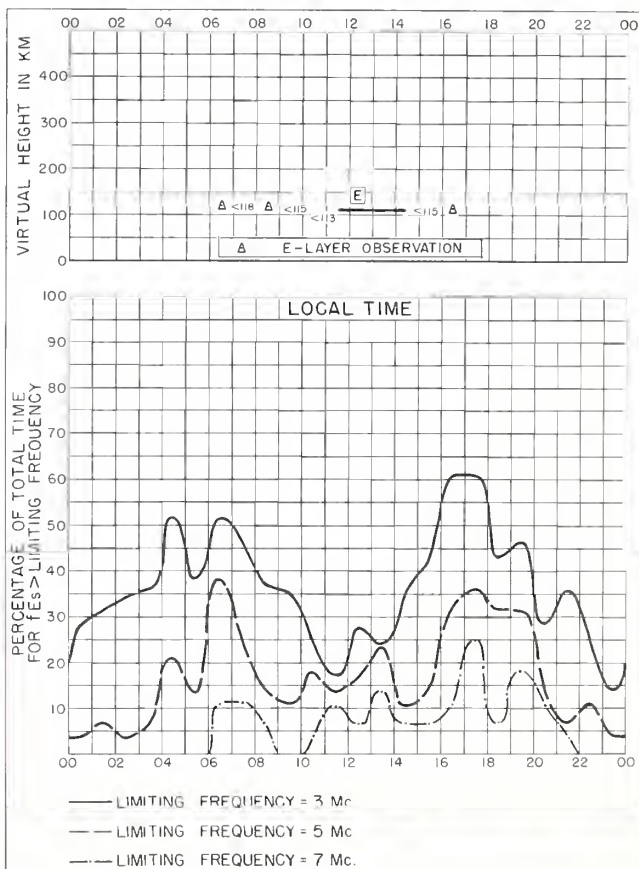


Fig. 78. GODHAVN, GREENLAND

MARCH 1960



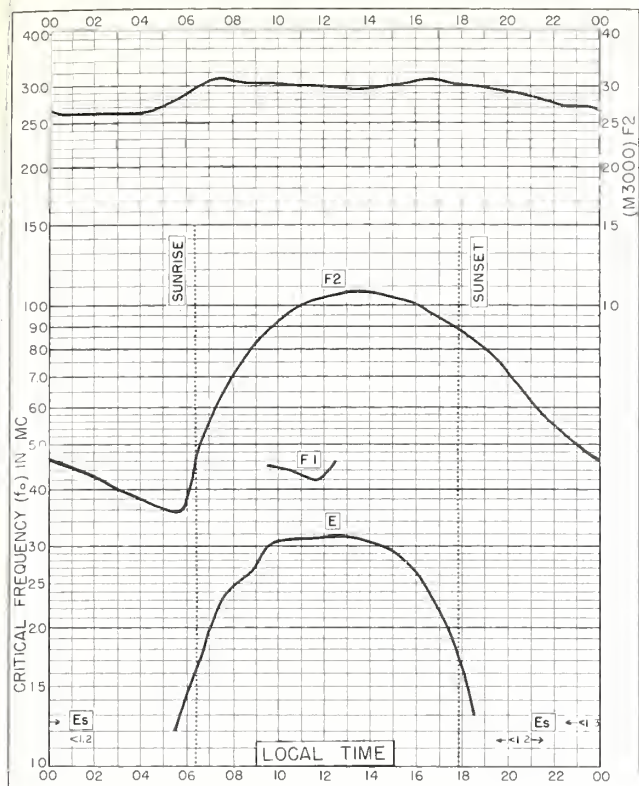


Fig. 79. MOSCOW, U. S. S. R.  
55.5°N, 37.3°E

MARCH 1960

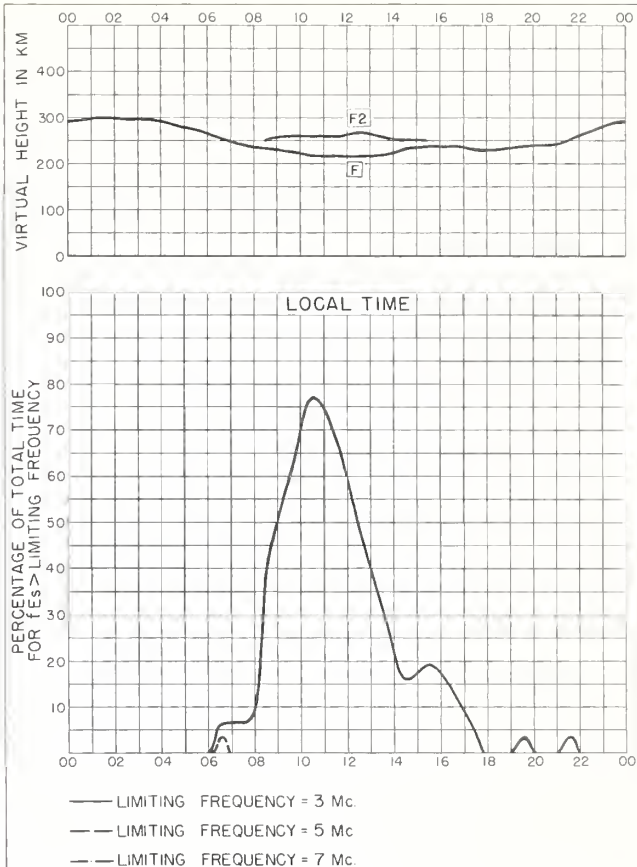


Fig. 80. MOSCOW, U. S. S. R.

MARCH 1960

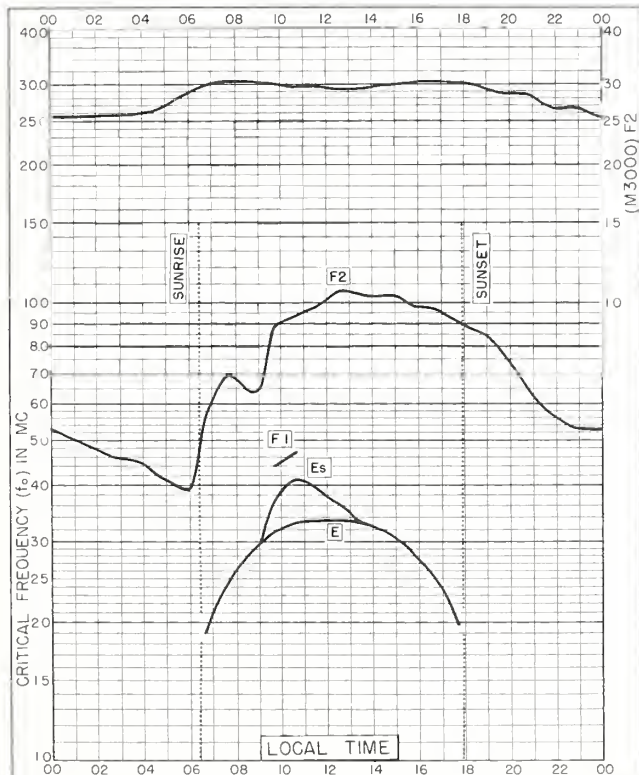


Fig. 81. LINDAU/HARZ, GERMANY  
51.6°N, 10.1°E

MARCH 1960

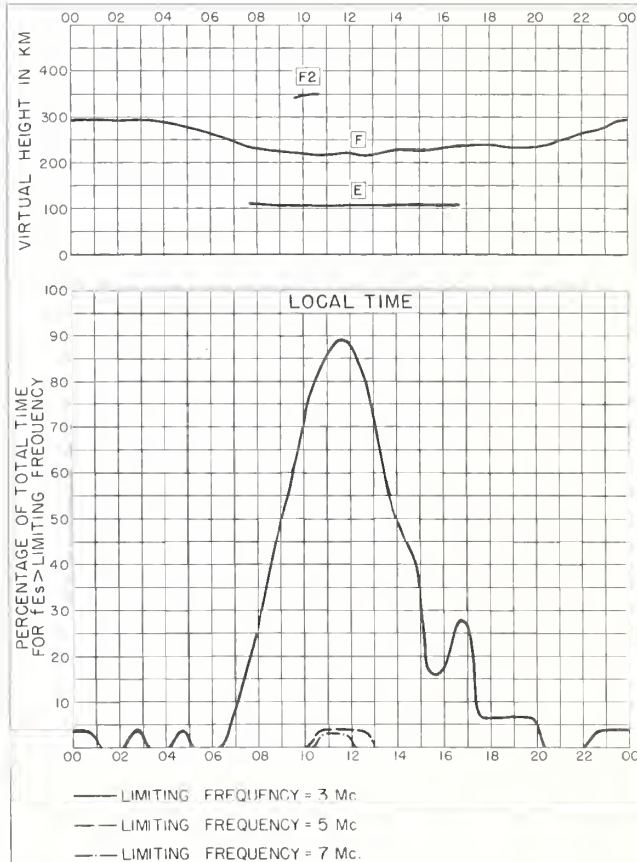


Fig. 82. LINDAU/HARZ, GERMANY

MARCH 1960

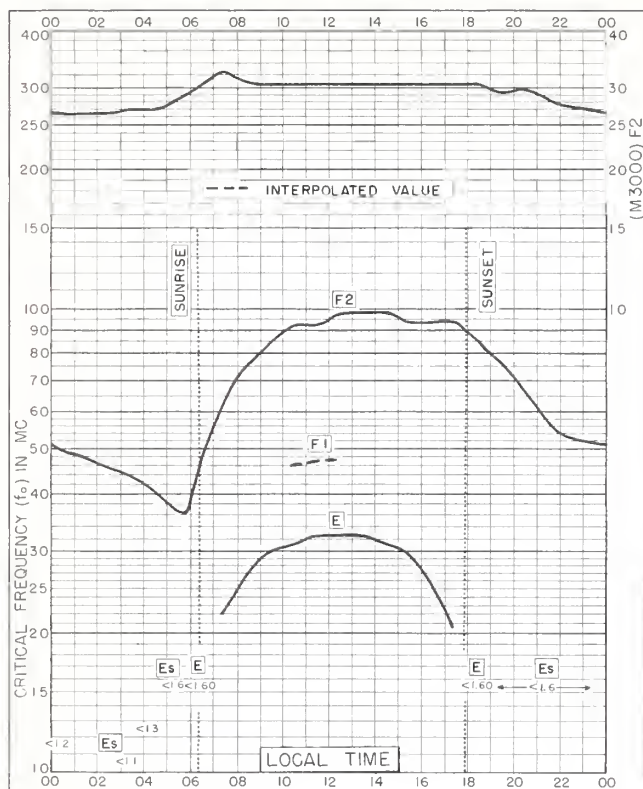


Fig. 83. DOURBES, BELGIUM  
50.1°N, 4.6°E

MARCH 1960

NBS 503

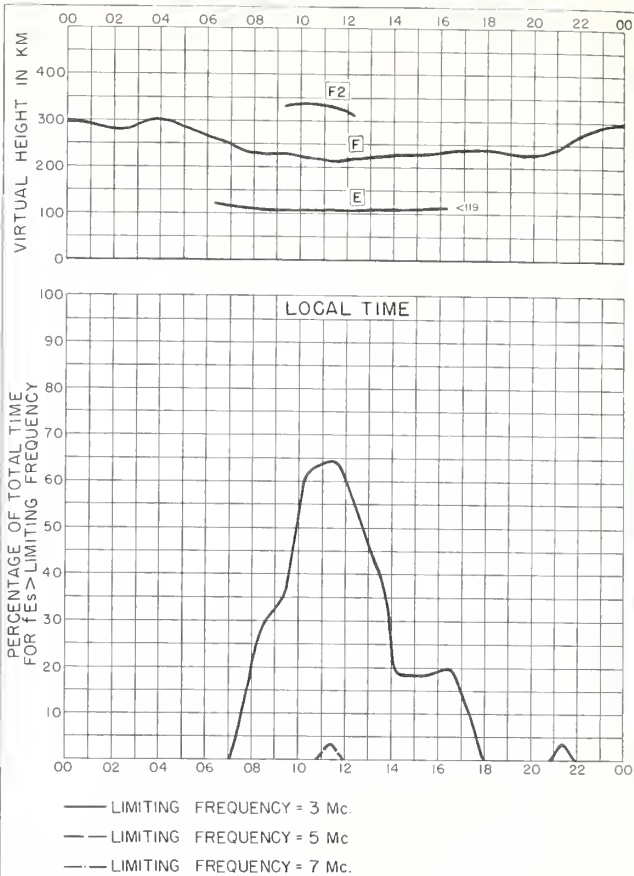


Fig. 84. DOURBES, BELGIUM

MARCH 1960

NBS 490

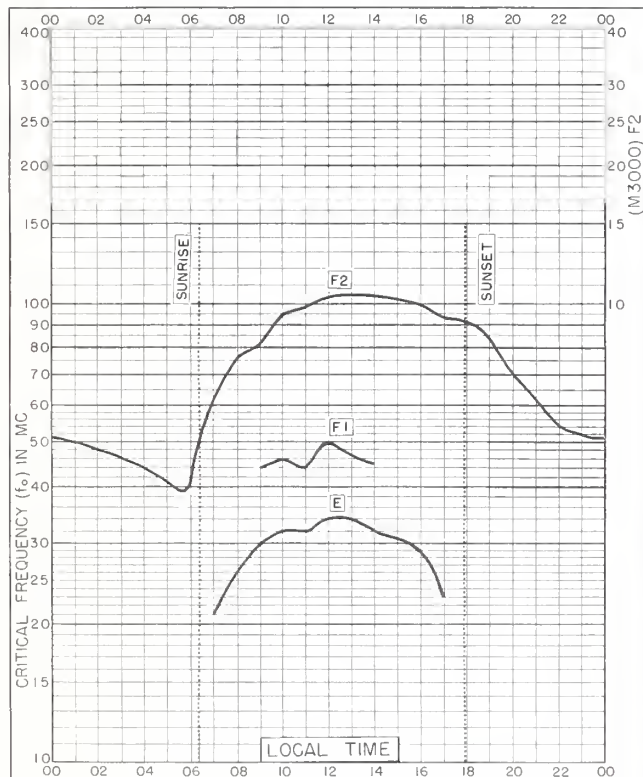


Fig. 85. PRUHONICE, CZECHOSLOVAKIA  
50.0°N, 14.6°E

MARCH 1960

NBS 503

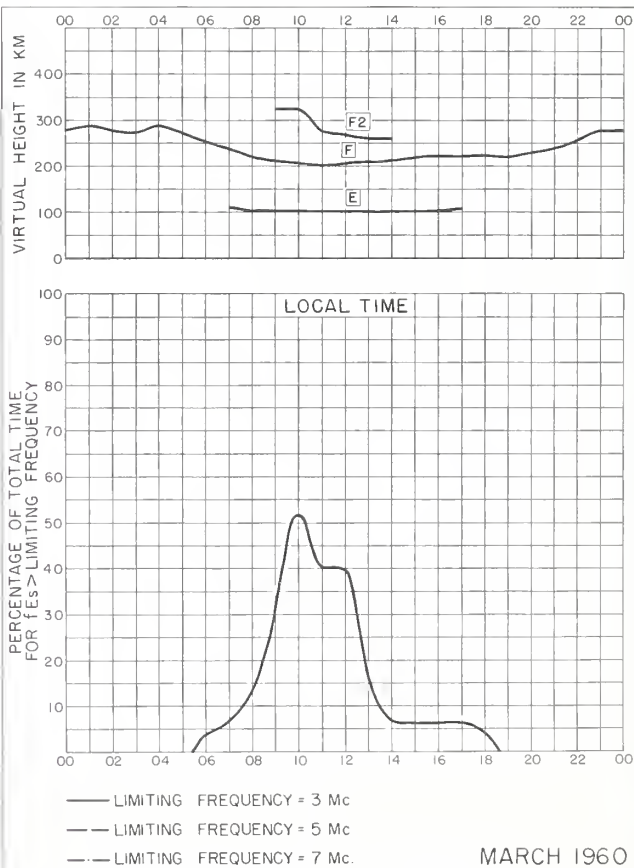


Fig. 86. PRUHONICE, CZECHOSLOVAKIA

MARCH 1960

NBS 490



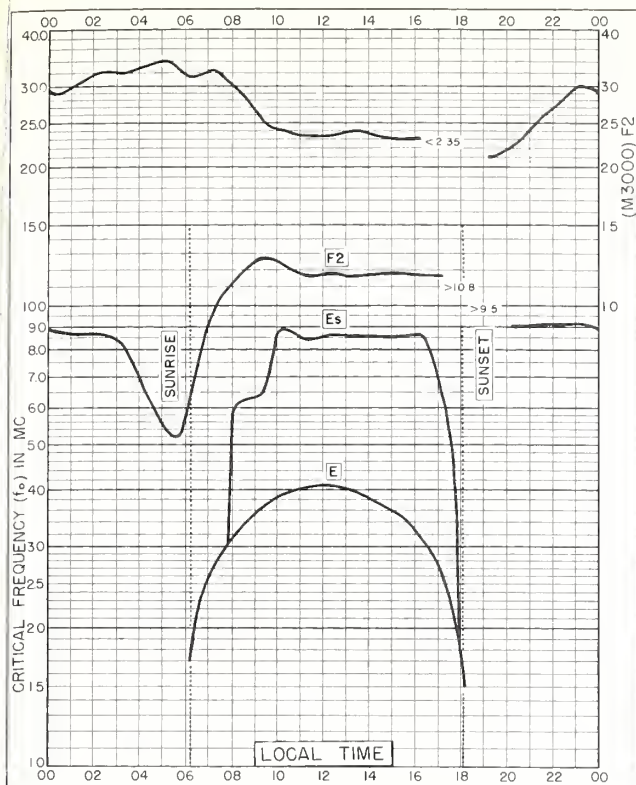


Fig. 87. IBADAN, NIGERIA  
7.4°N, 3.9°E

MARCH 1960

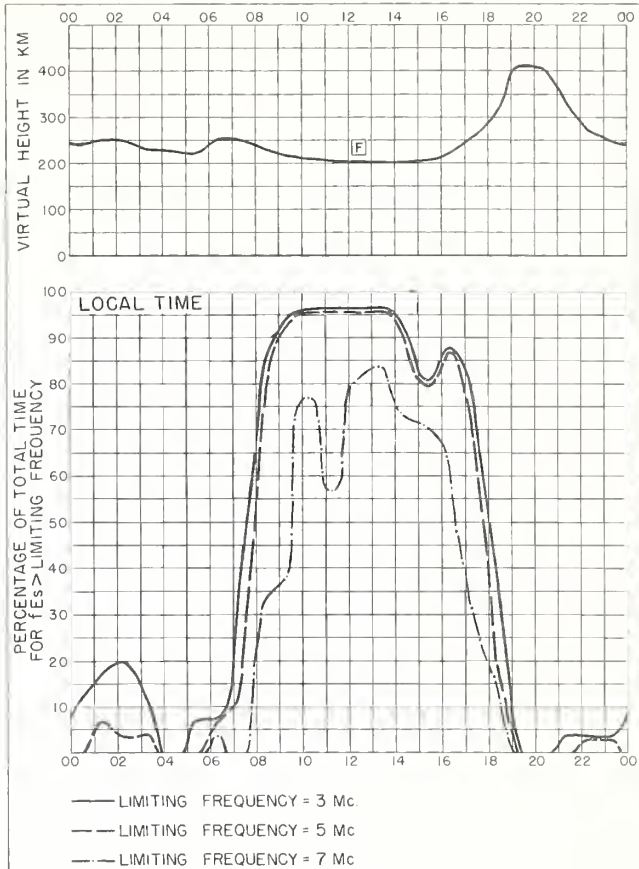


Fig. 88. IBADAN, NIGERIA

MARCH 1960

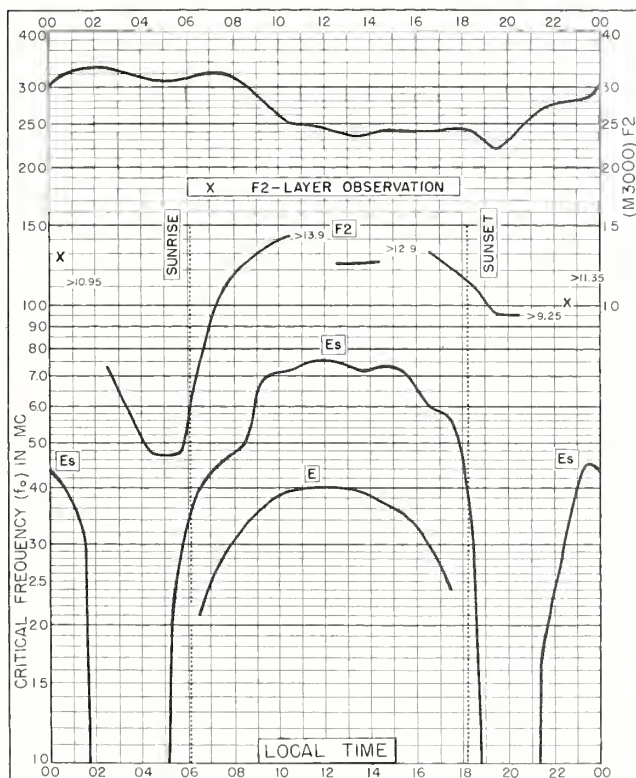


Fig. 89. LA PAZ, BOLIVIA  
16.5°S, 68.1°W

MARCH 1960

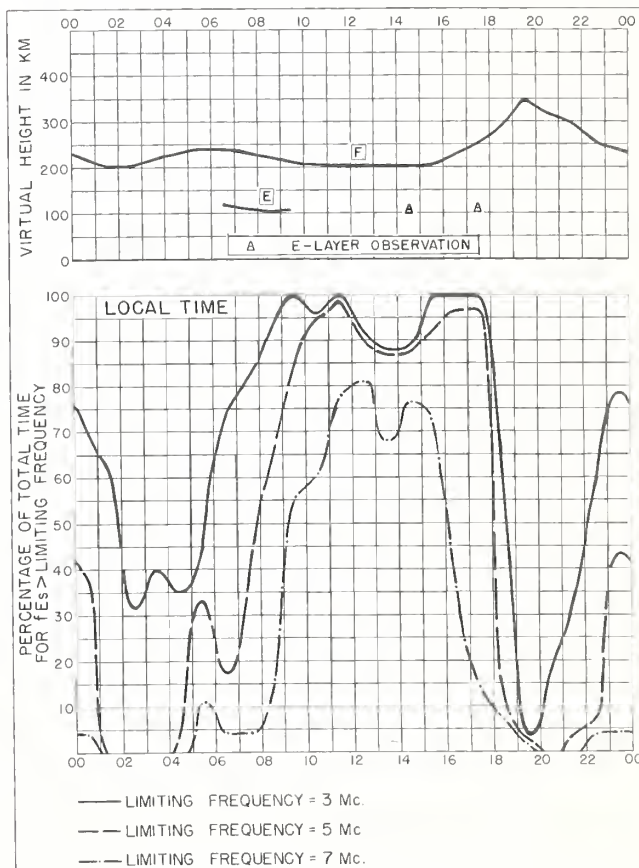


Fig. 90. LA PAZ, BOLIVIA

MARCH 1960

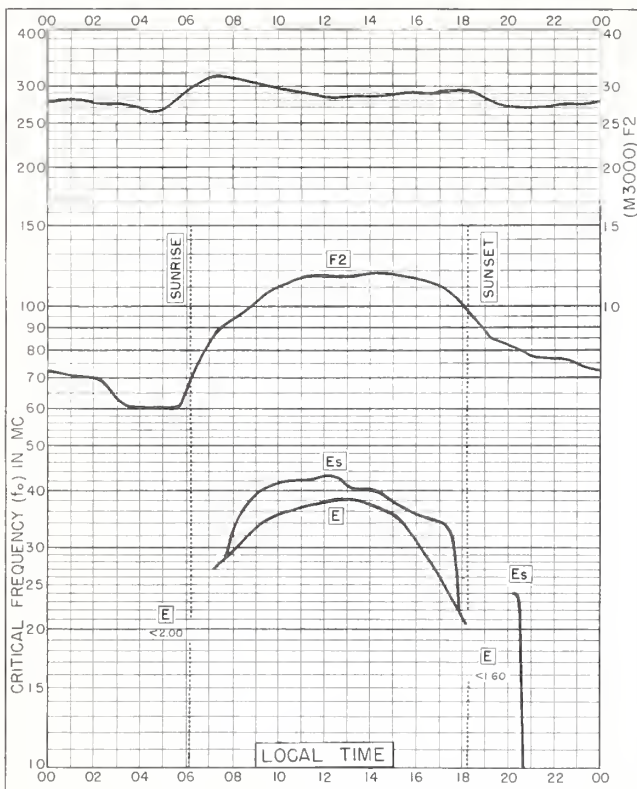


Fig. 91. BRISBANE, AUSTRALIA  
27.5°S, 152.9°E

MARCH 1960

NBS 503

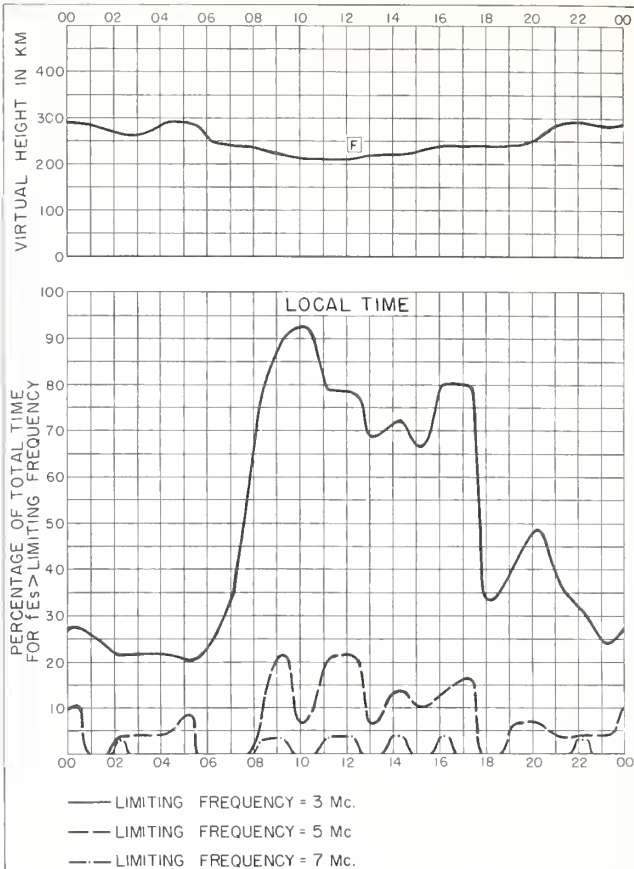


Fig. 92. BRISBANE, AUSTRALIA

MARCH 1960

NBS 490

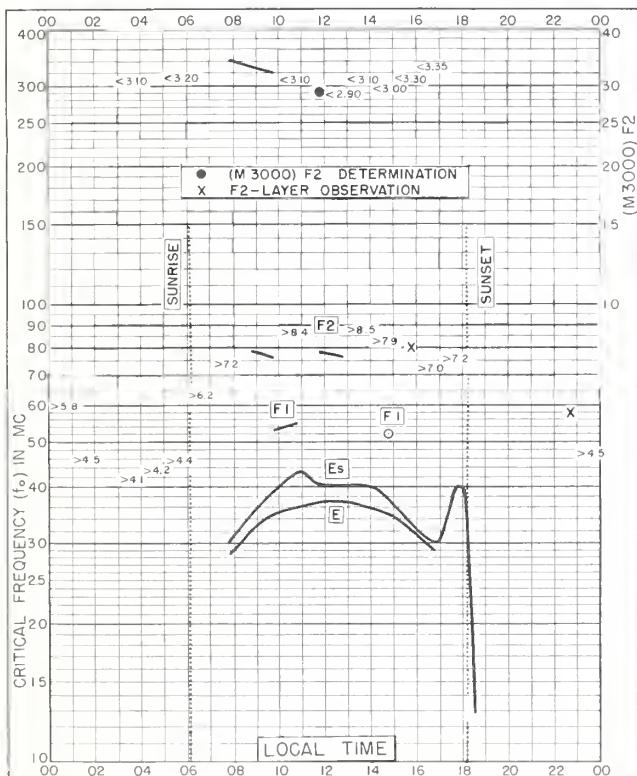


Fig. 93. MUNDARING, W. AUSTRALIA  
32.0°S, 116.2°E

MARCH 1960

NBS 503

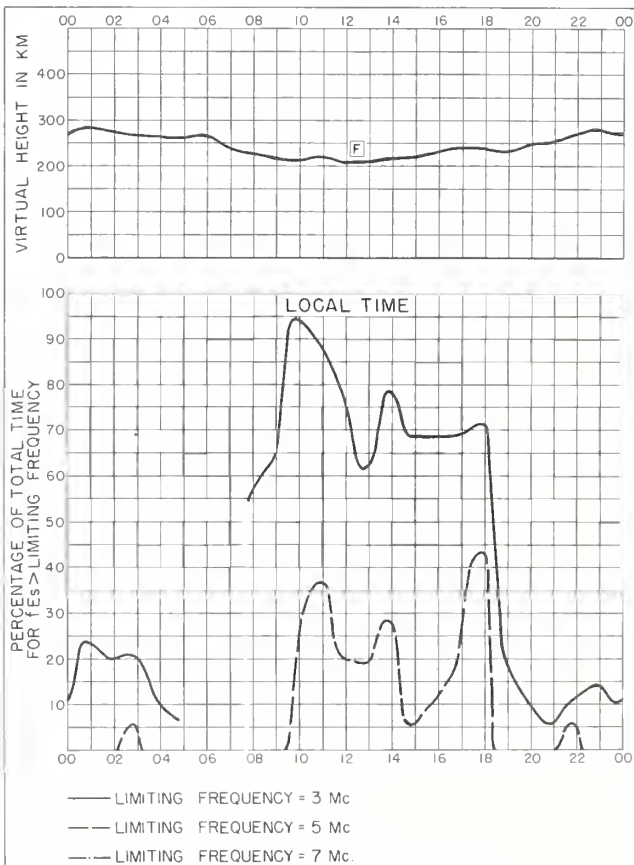


Fig. 94. MUNDARING, W. AUSTRALIA MARCH 1960

NBS 490



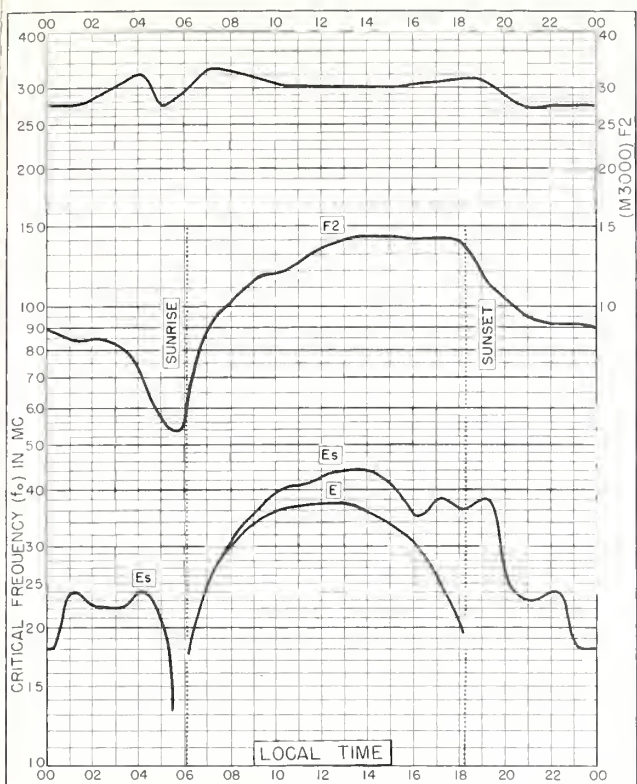


Fig. 95. CONCEPCION, CHILE  
36.6°S, 73.0°W

MARCH 1960

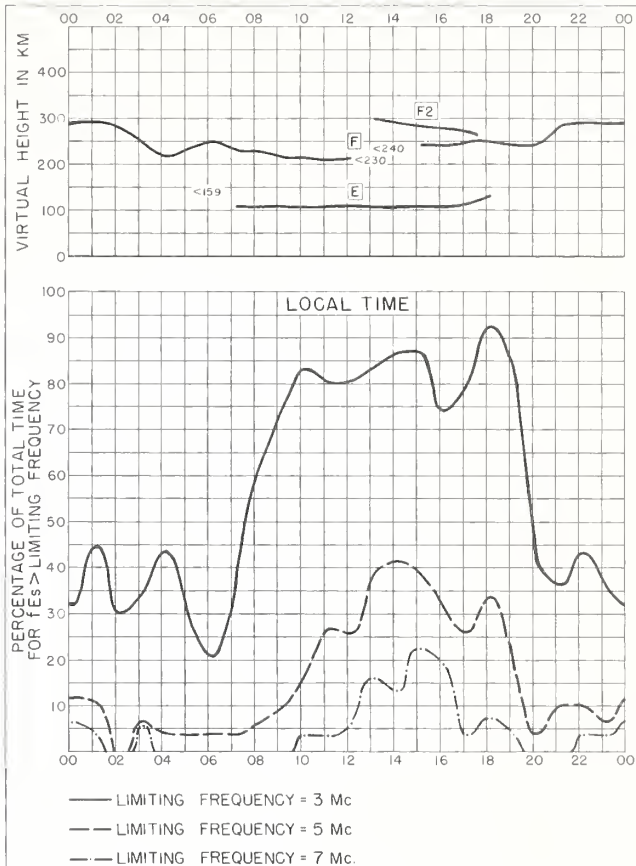


Fig. 96. CONCEPCION, CHILE

MARCH 1960

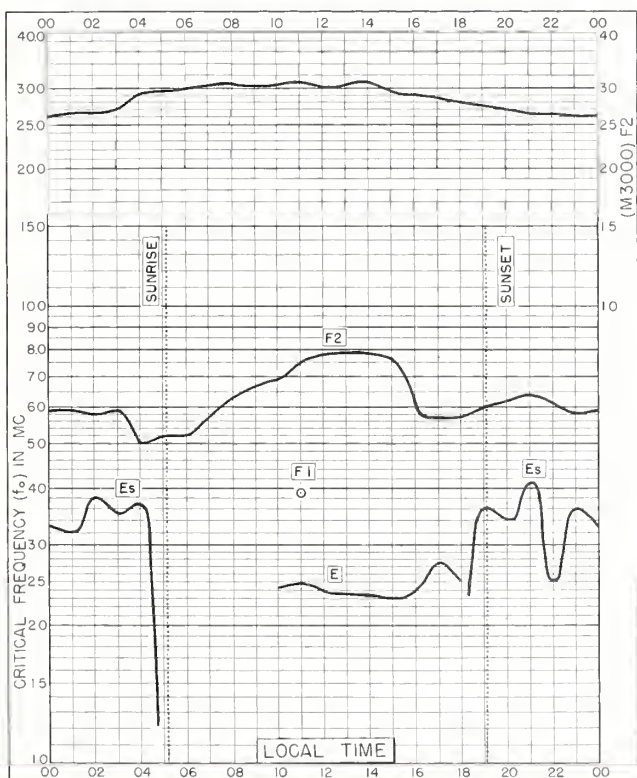


Fig. 97. BYRD STATION  
80.0°S, 120.0°W

MARCH 1960

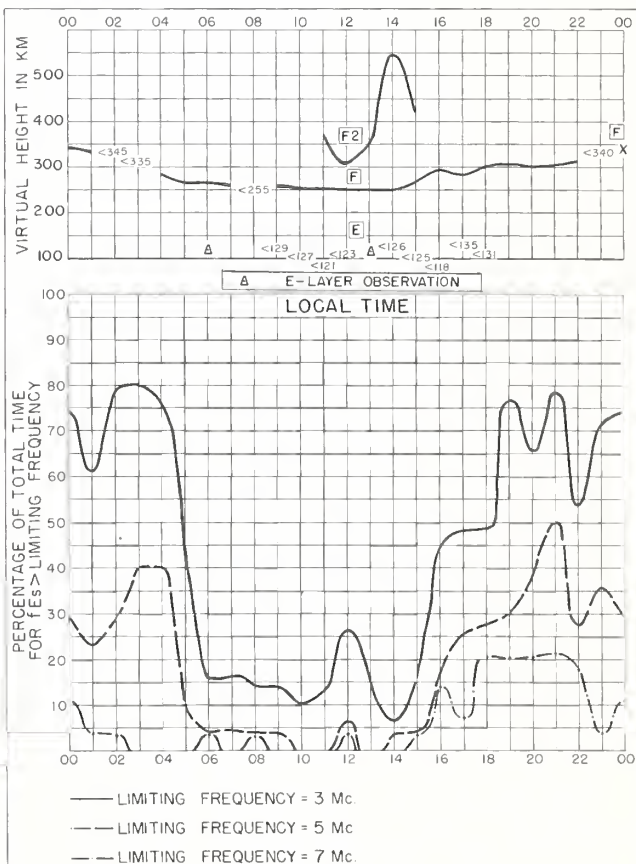
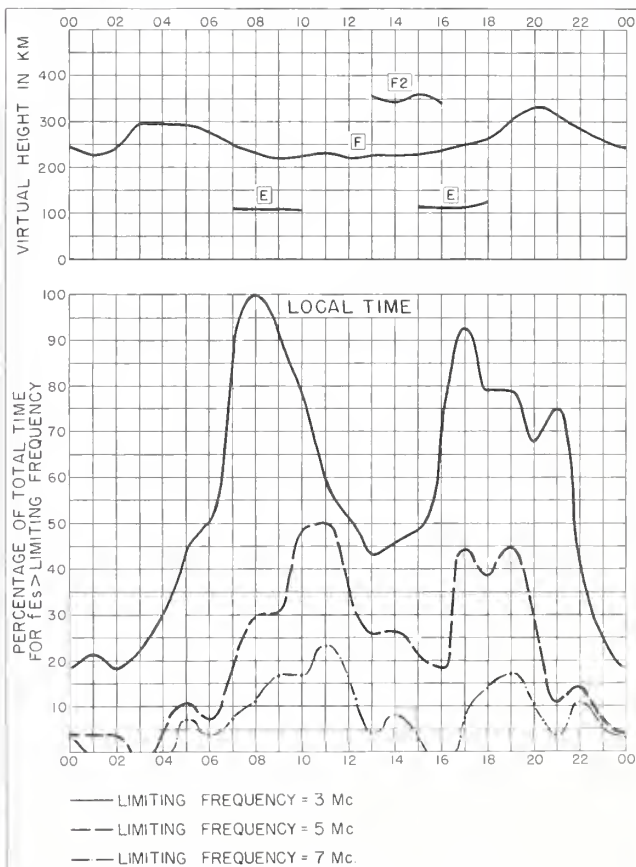
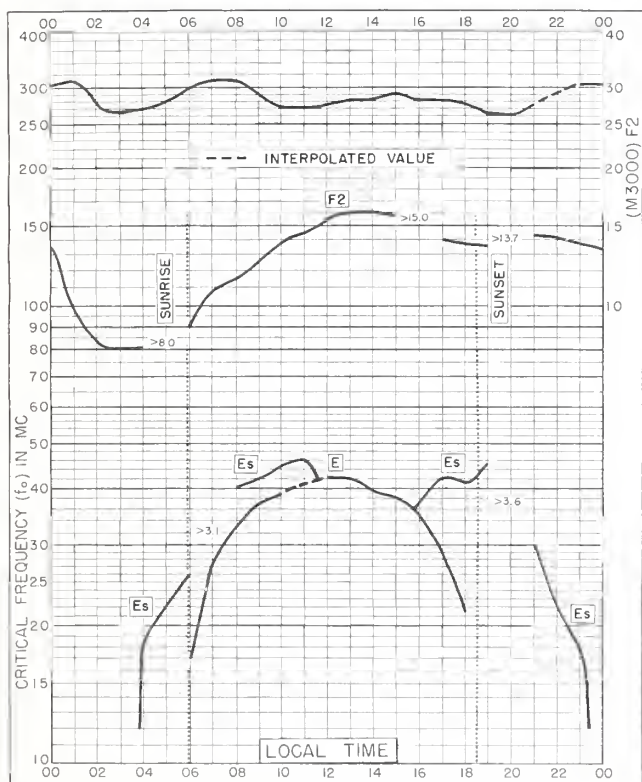
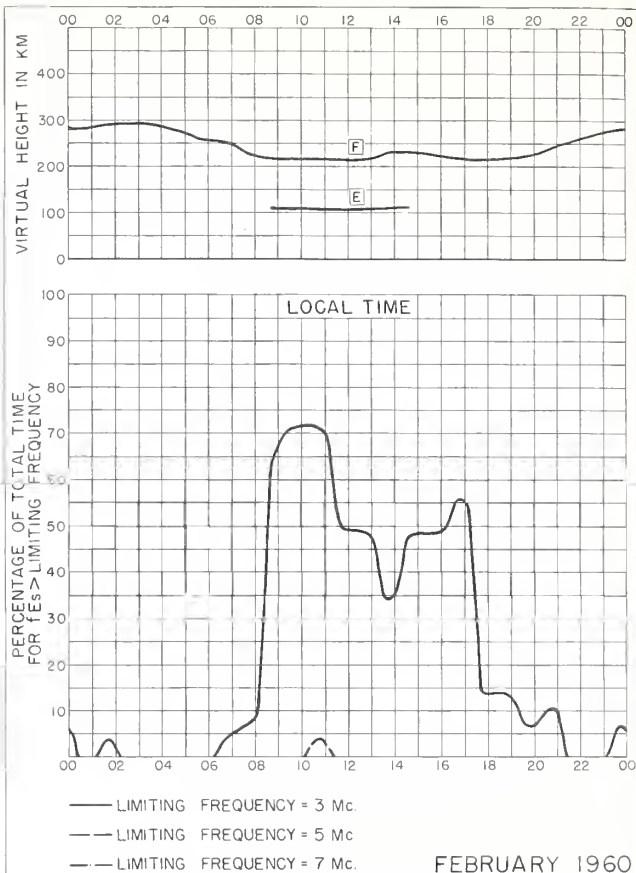
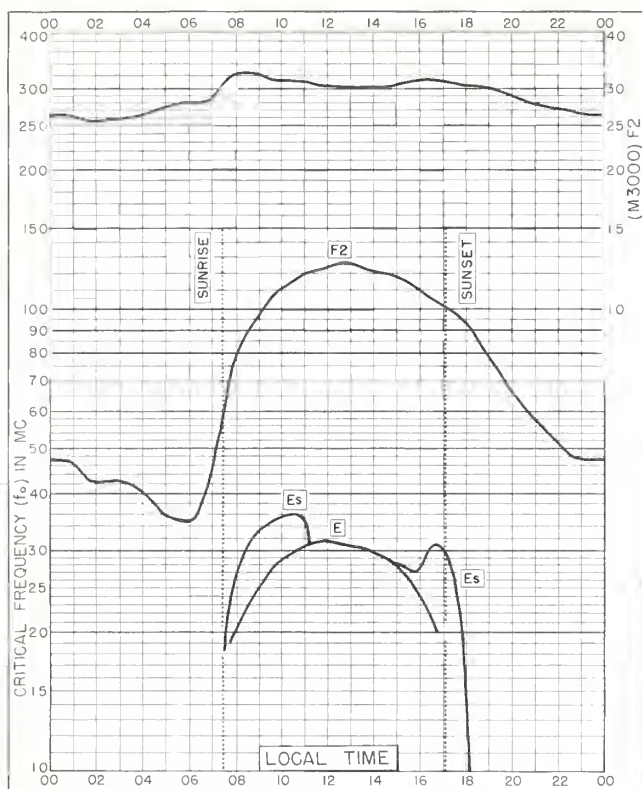


Fig. 98. BYRD STATION

MARCH 1960





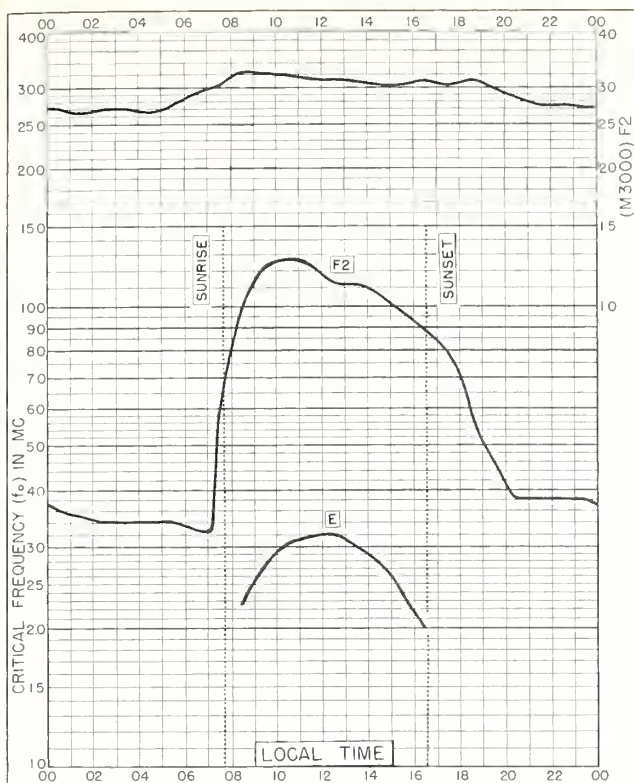


Fig. 103. WAKKANAI, JAPAN  
45.4°N, 141.7°E

JANUARY 1960

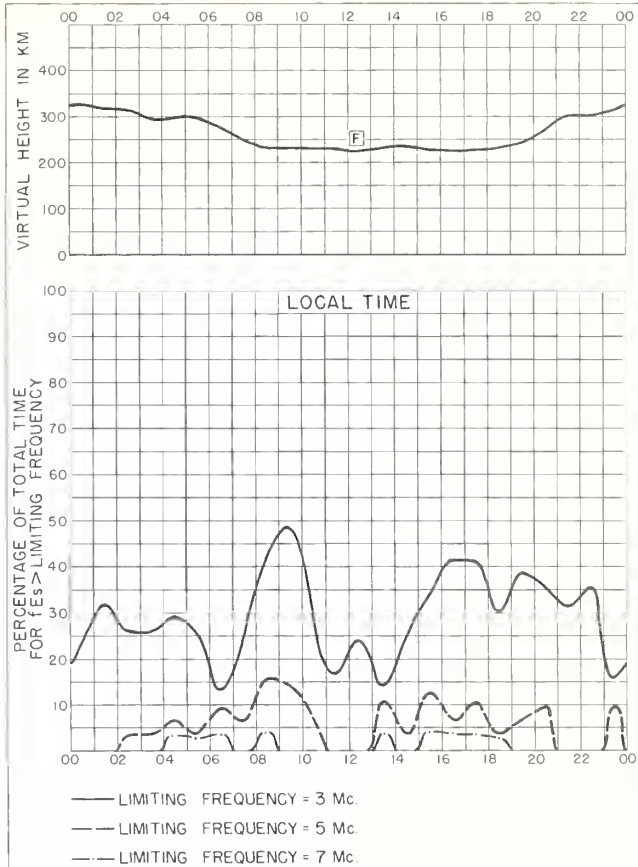


Fig. 104. WAKKANAI, JAPAN

JANUARY 1960

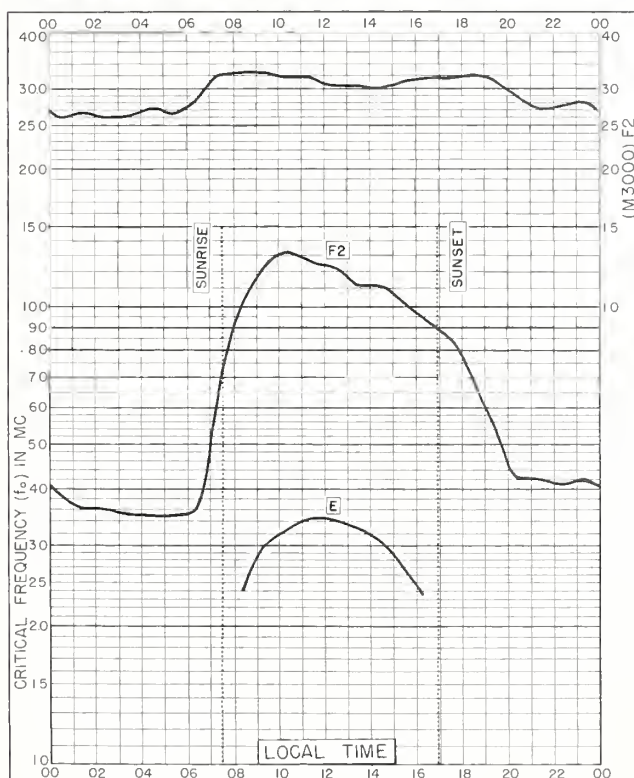


Fig. 105. AKITA, JAPAN  
39.7°N, 140.1°E

JANUARY 1960

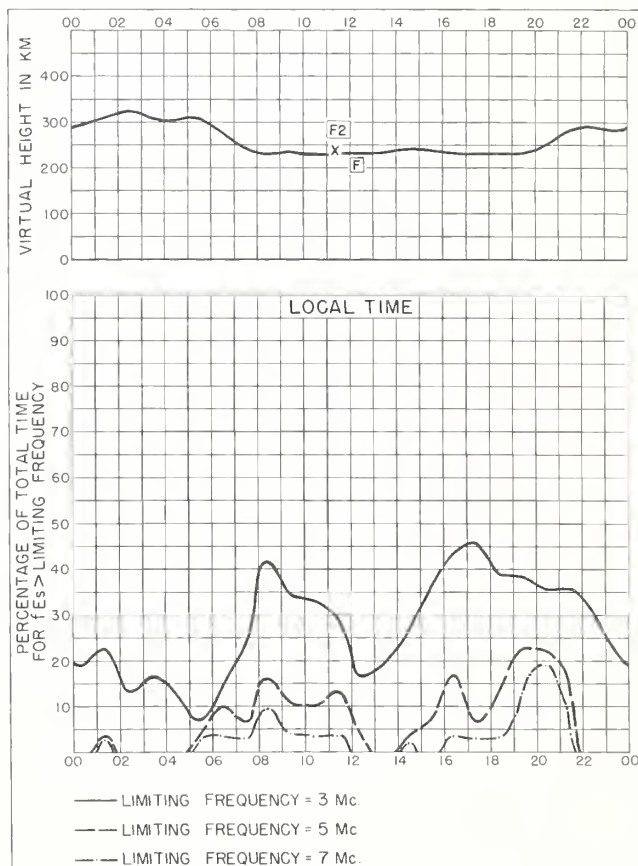


Fig. 106. AKITA, JAPAN

JANUARY 1960



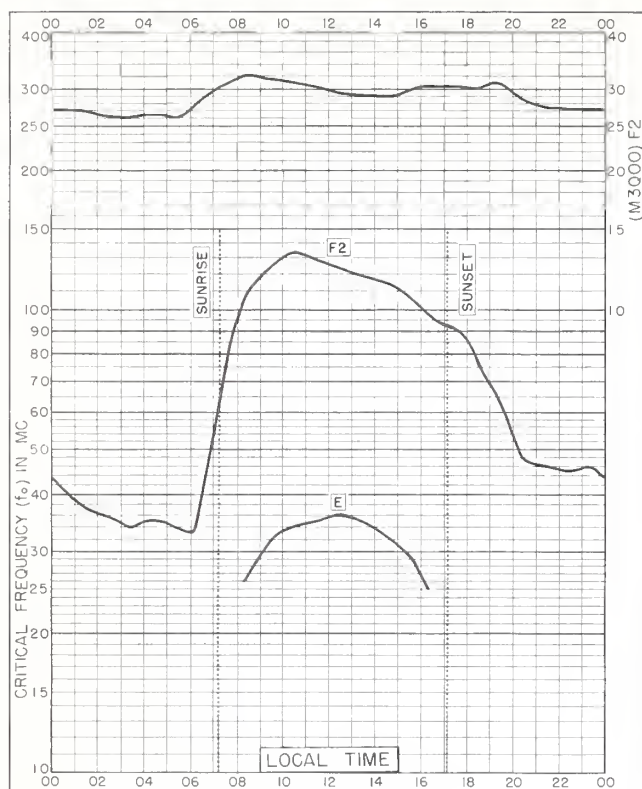


Fig. 107. TOKYO, JAPAN  
35.7°N, 139.5°E

JANUARY 1960

NBS 503

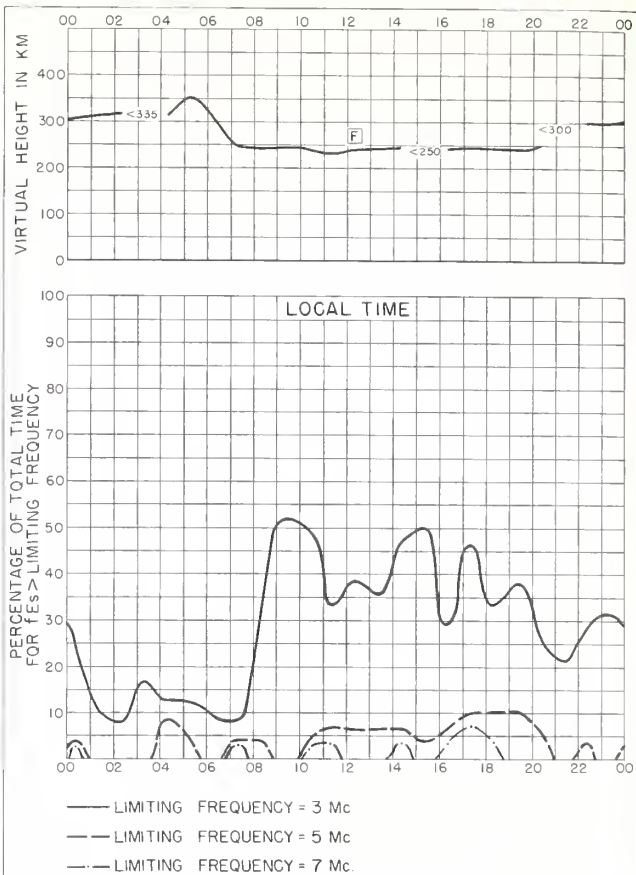


Fig. 108. TOKYO, JAPAN

JANUARY 1960

NBS 490

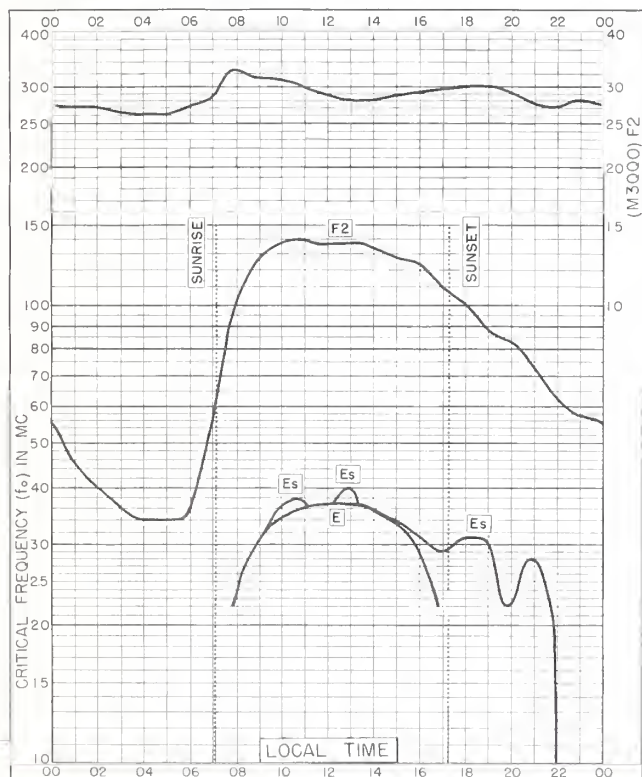


Fig. 109. YAMAGAWA, JAPAN  
31.2°N, 130.6°E

JANUARY 1960

NBS 503

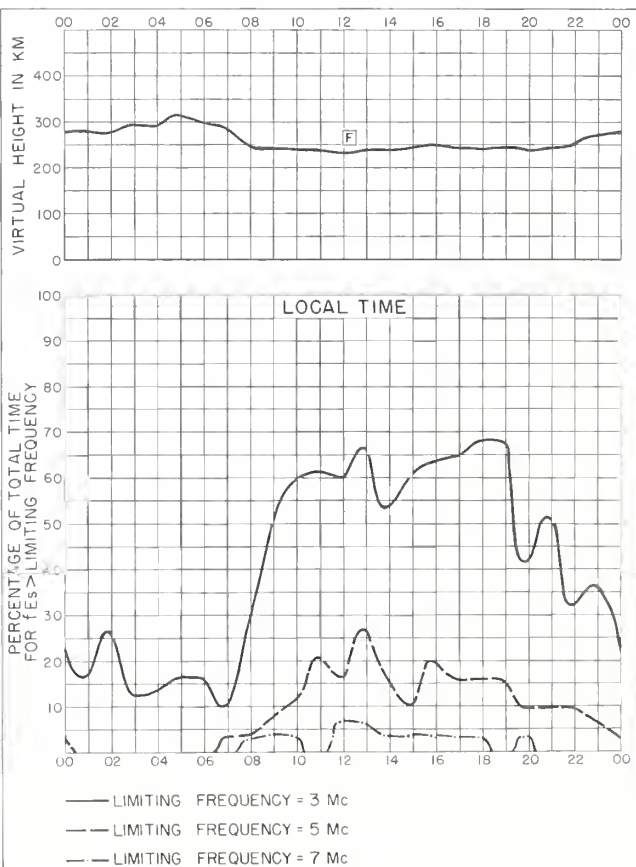


Fig. 110. YAMAGAWA, JAPAN

JANUARY 1960

NBS 490



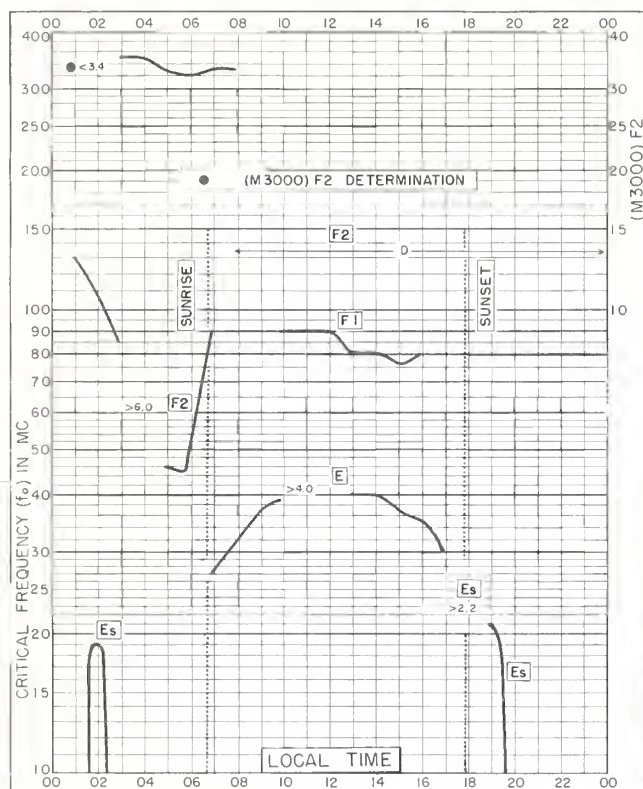


Fig. II5. CALCUTTA, INDIA  
23.0°N, 88.6°E

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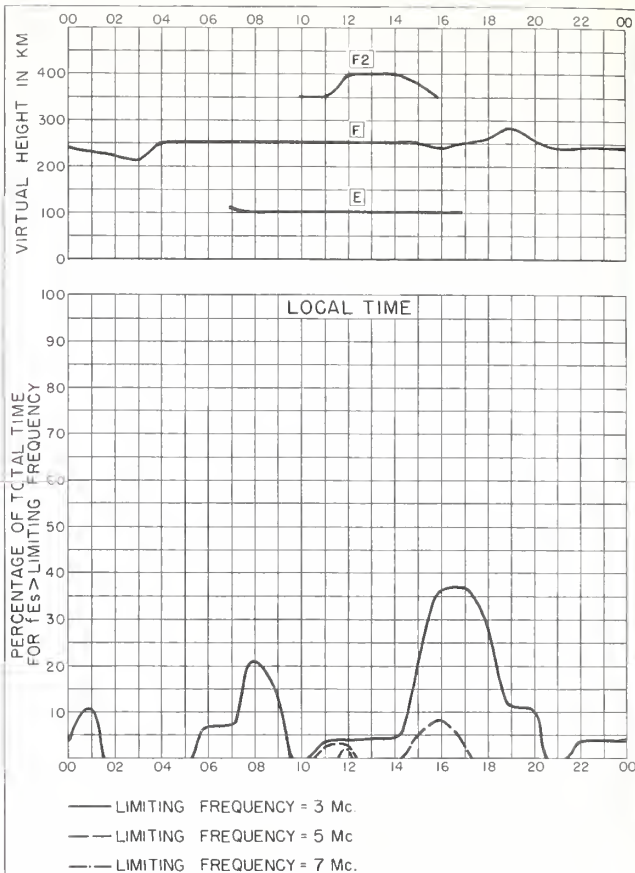


Fig. II6. CALCUTTA, INDIA

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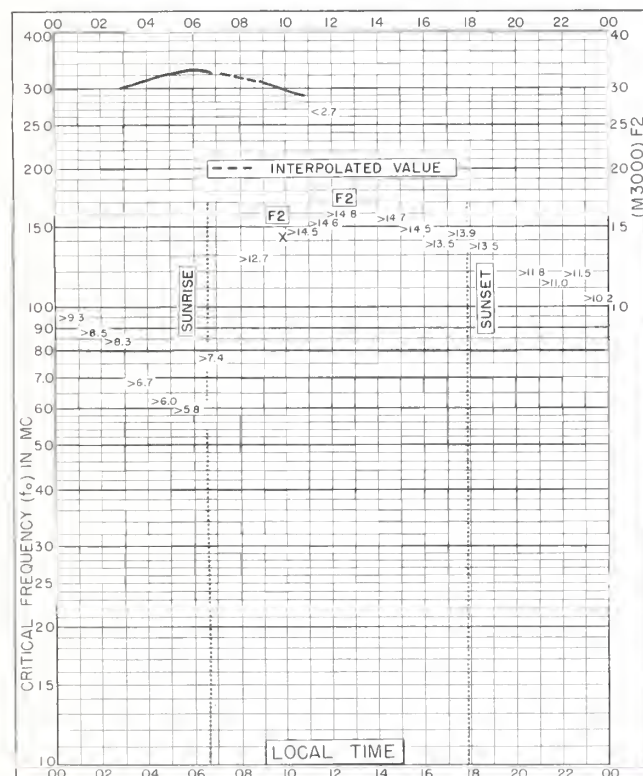


Fig. II7. BOMBAY, INDIA  
19.0°N, 72.8°E

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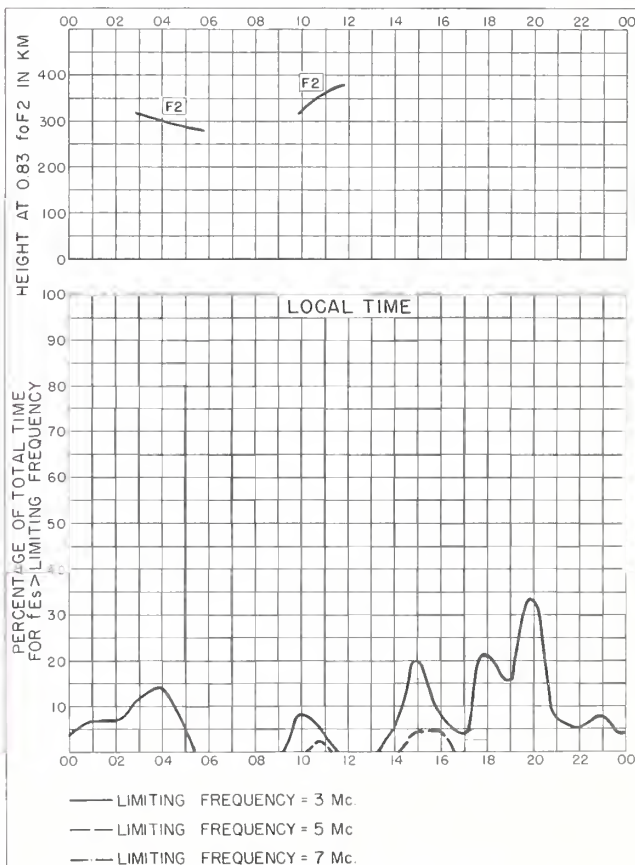


Fig. II8. BOMBAY, INDIA

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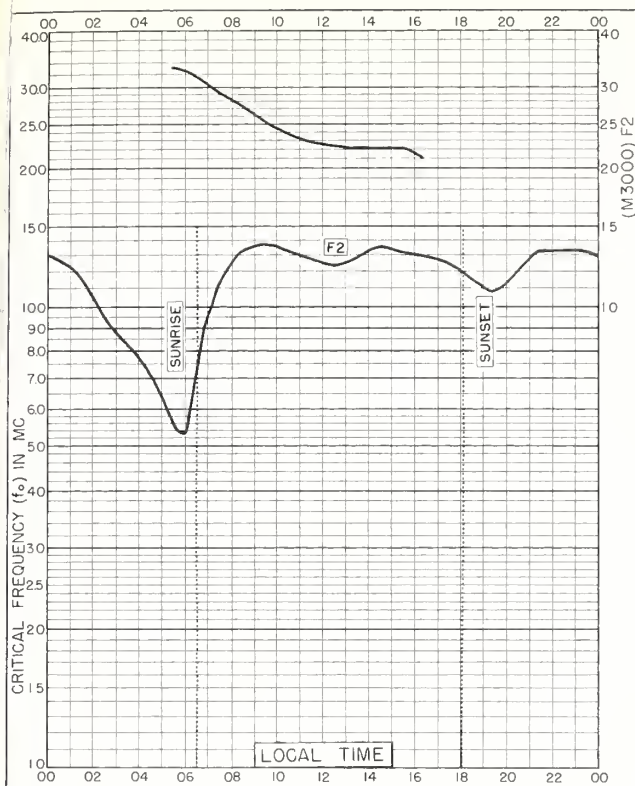


Fig. 119. MADRAS, INDIA  
13.1°N, 80.3°E  
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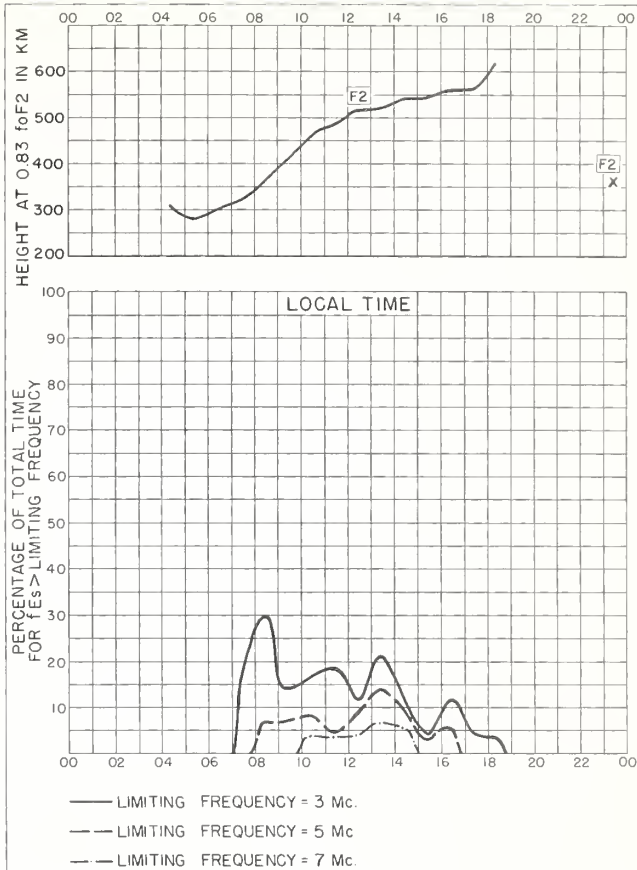


Fig. 120. MADRAS, INDIA  
FEBRUARY 1959

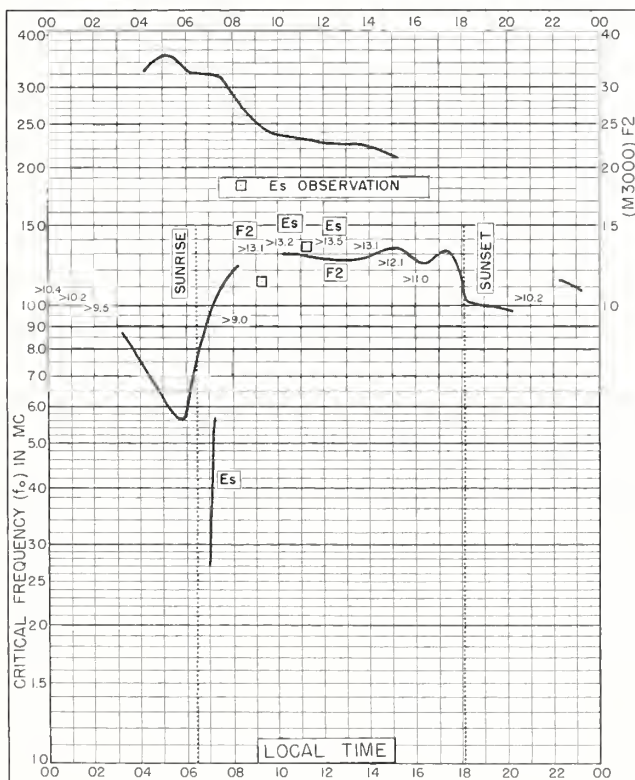


Fig. 121. TIRUCHY, INDIA  
10.8°N, 78.7°E  
FEBRUARY 1959

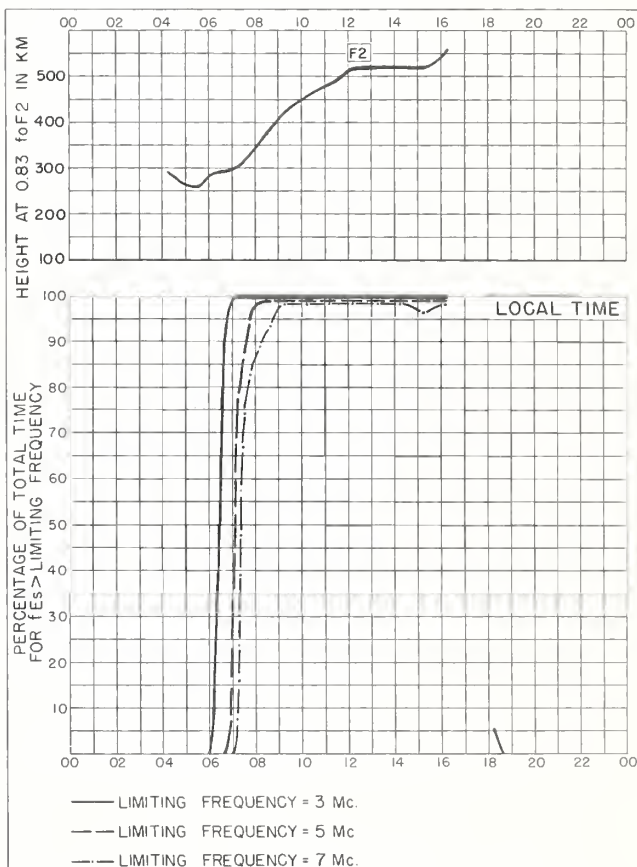


Fig. 122. TIRUCHY, INDIA  
FEBRUARY 1959



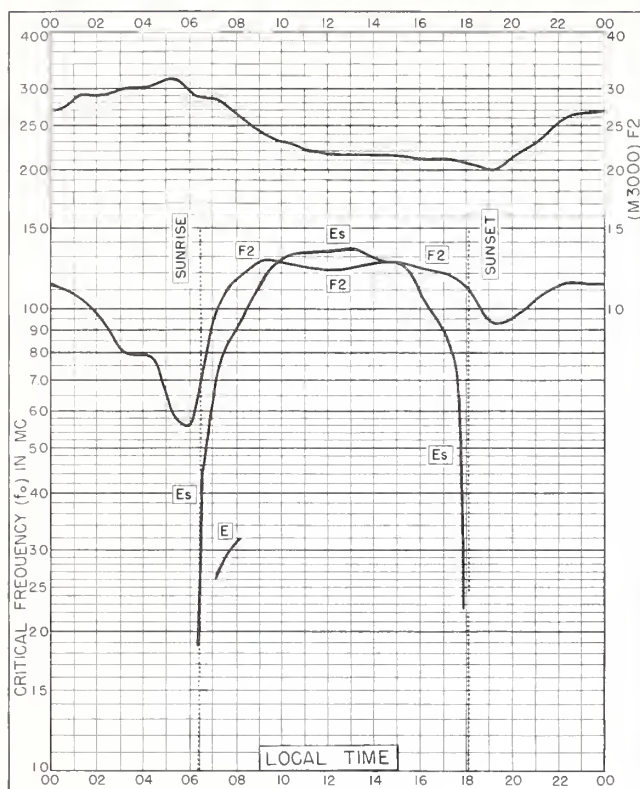


Fig. 123. KODAIKANAL, INDIA  
10.2°N, 77.5°E

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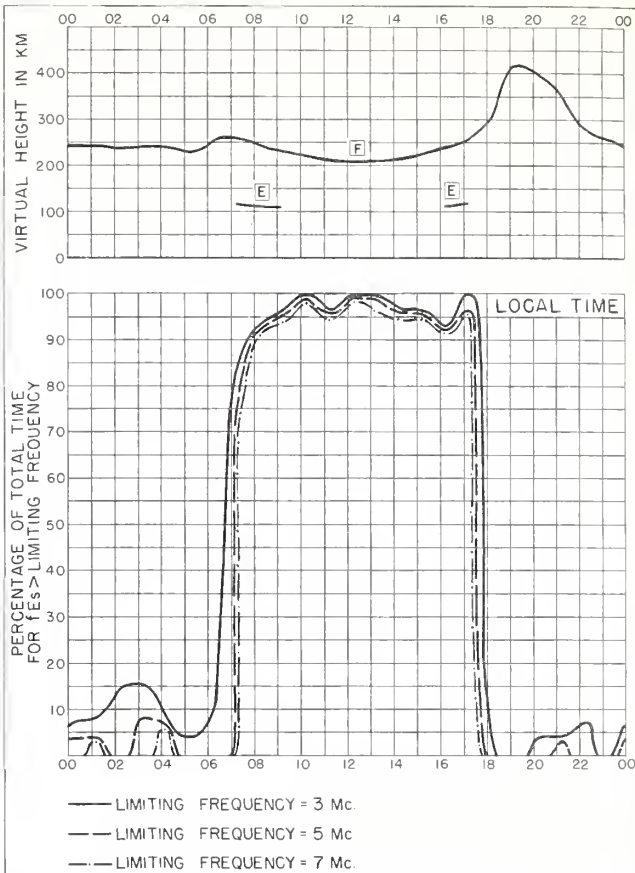


Fig. 124. KODAIKANAL, INDIA

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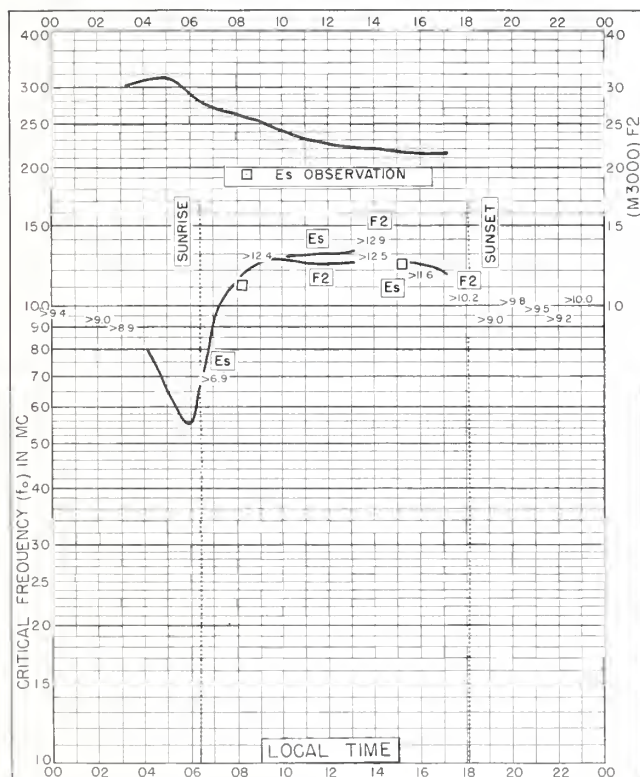


Fig. 125. TRIVANDRUM, INDIA  
8.5°N, 77.0°E

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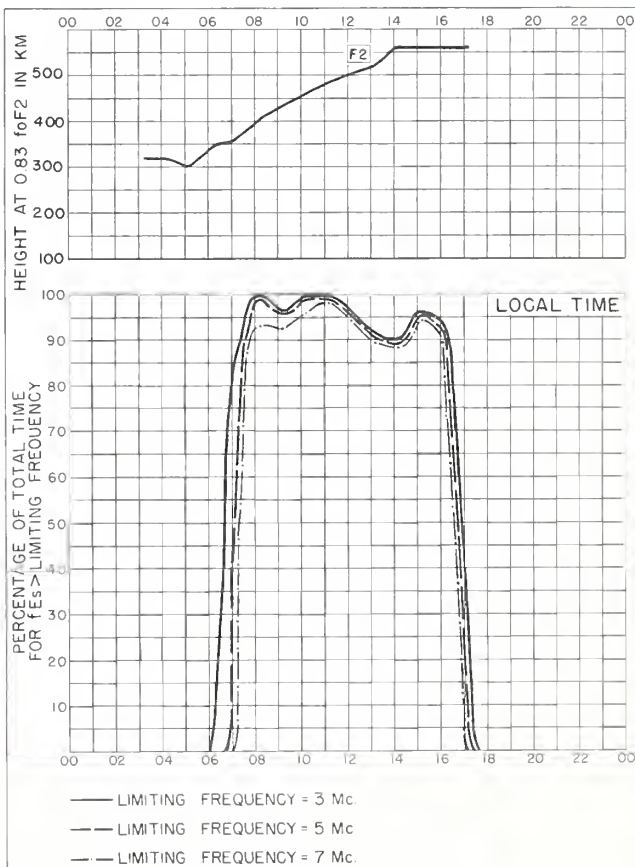


Fig. 126. TRIVANDRUM, INDIA

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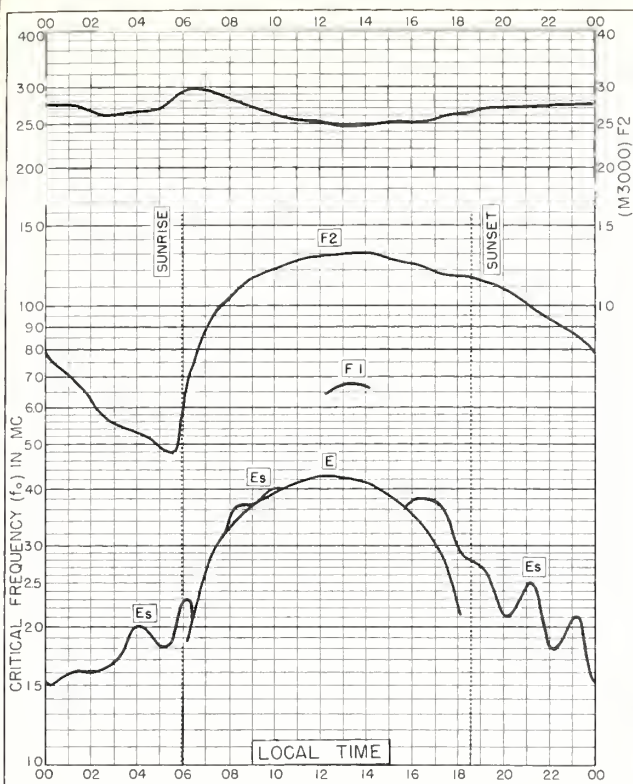


Fig. 127. TSUMEB, SOUTH W. AFRICA  
19.2°S, 17.7°E  
FEBRUARY 1959

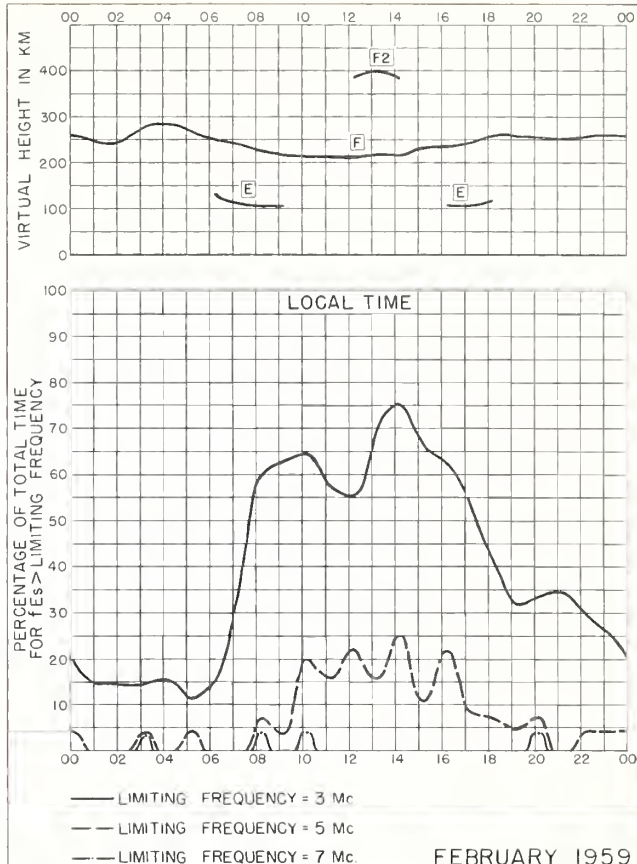


Fig. 128. TSUMEB, SOUTH W. AFRICA

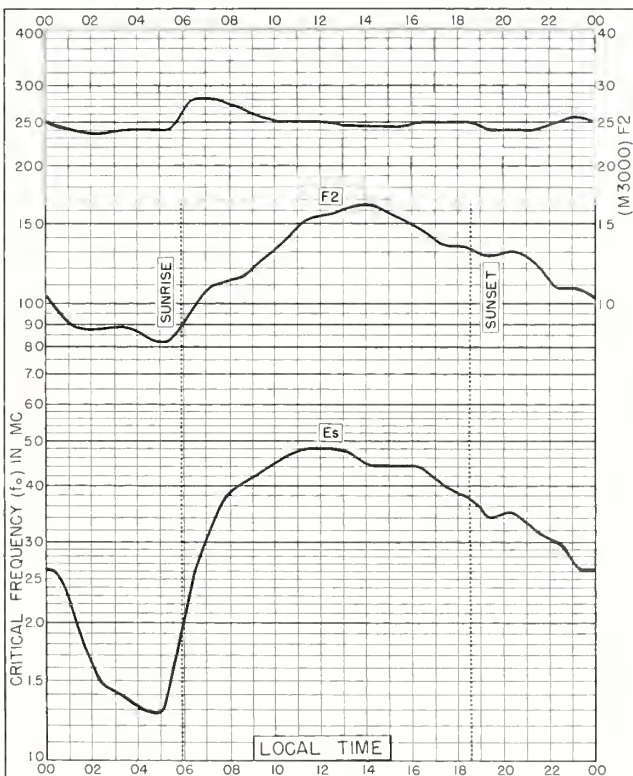


Fig. 129. RAROTONGA I.  
21.2°S, 159.8°W  
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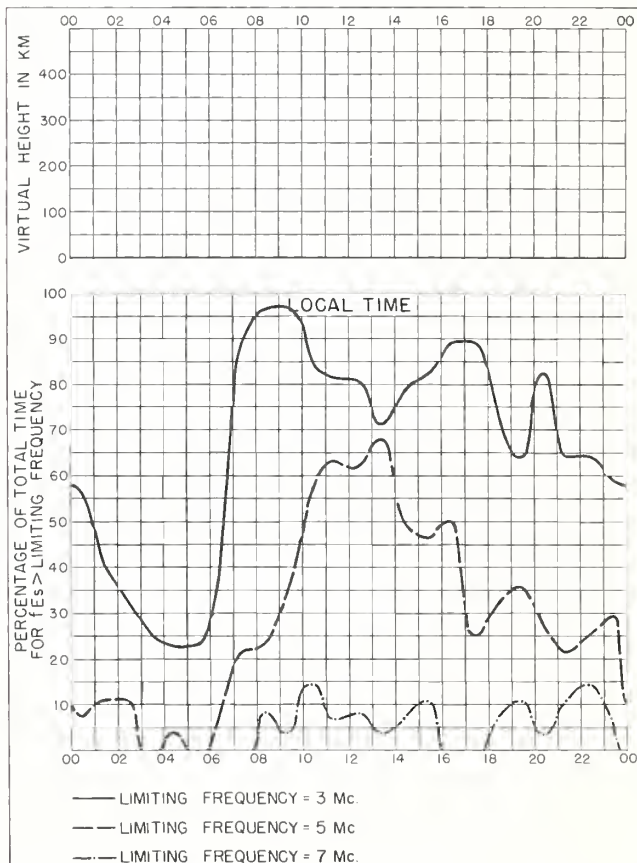
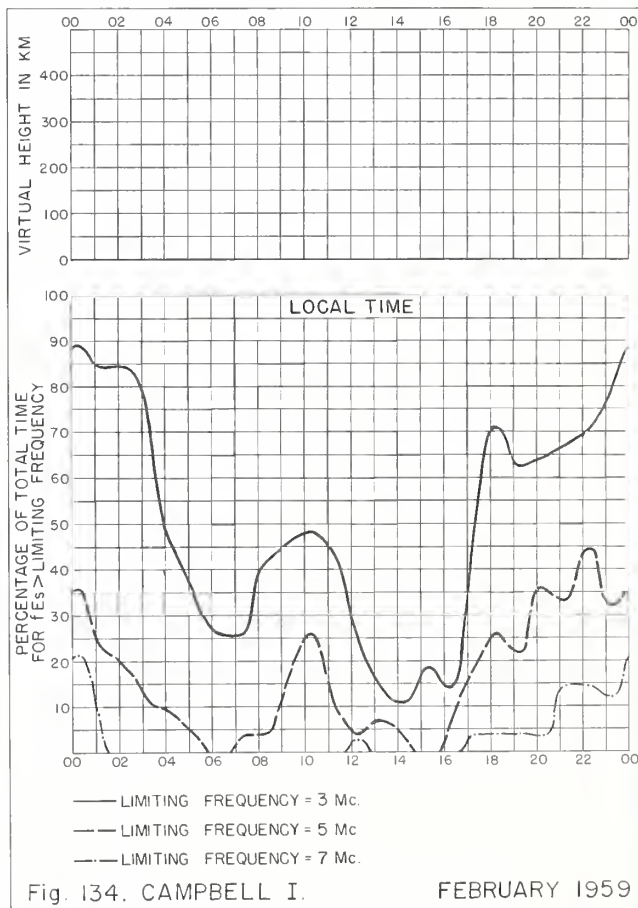
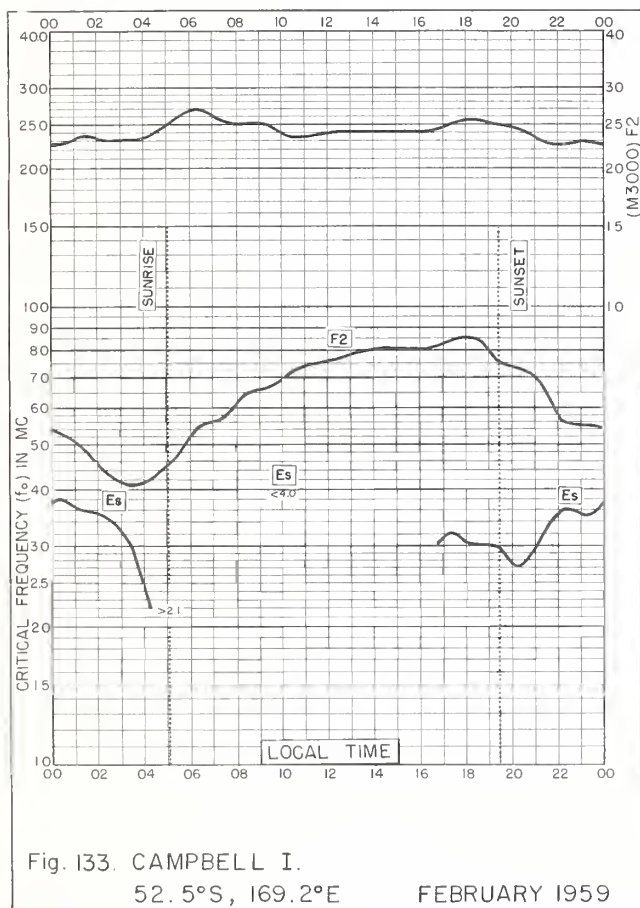
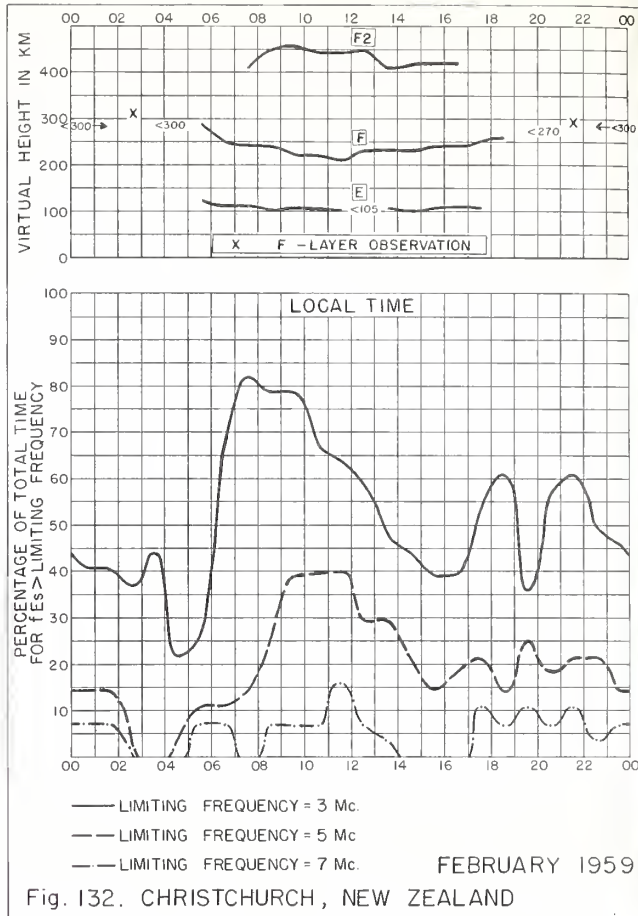
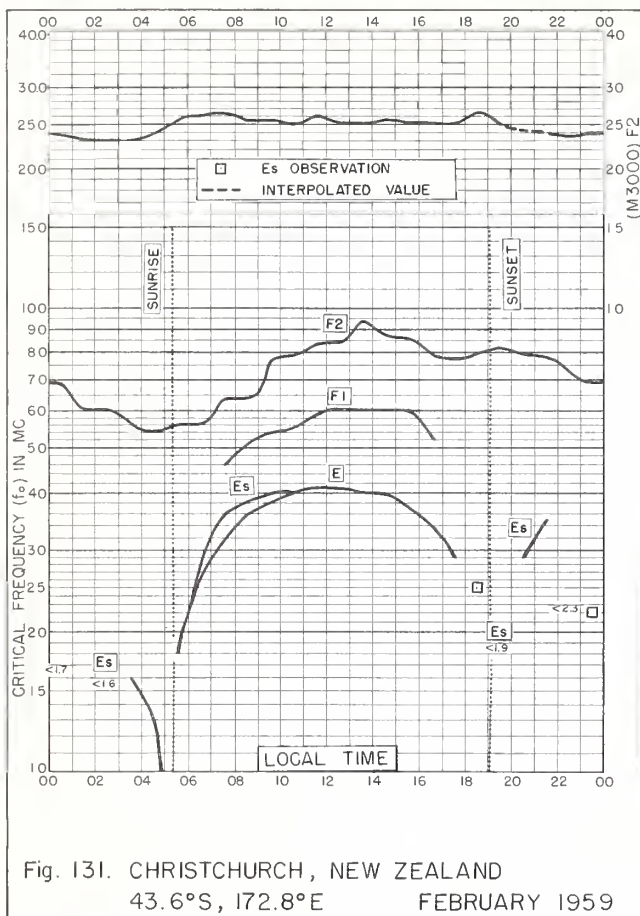


Fig. 130. RAROTONGA I.  
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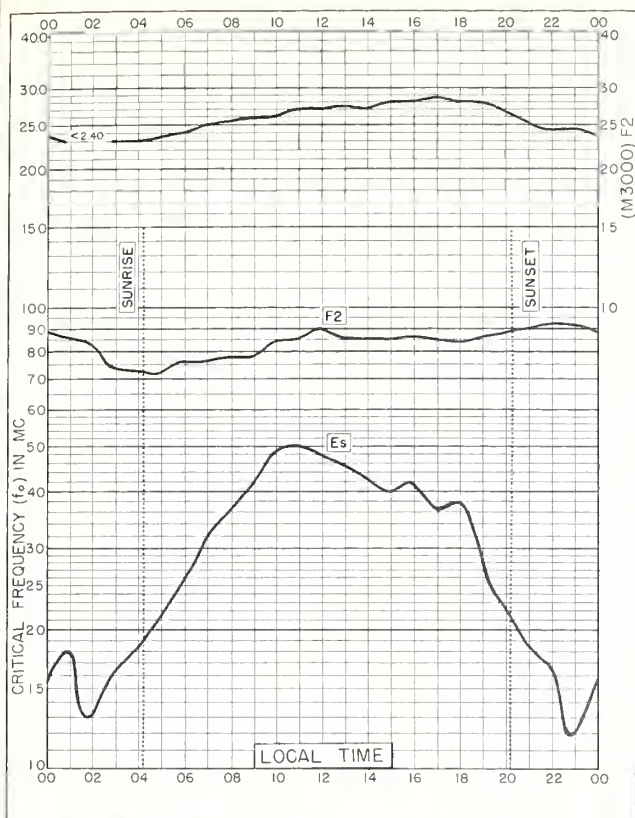


Fig. 135. PORT LOCKROY  
64.8°S, 63.5°W

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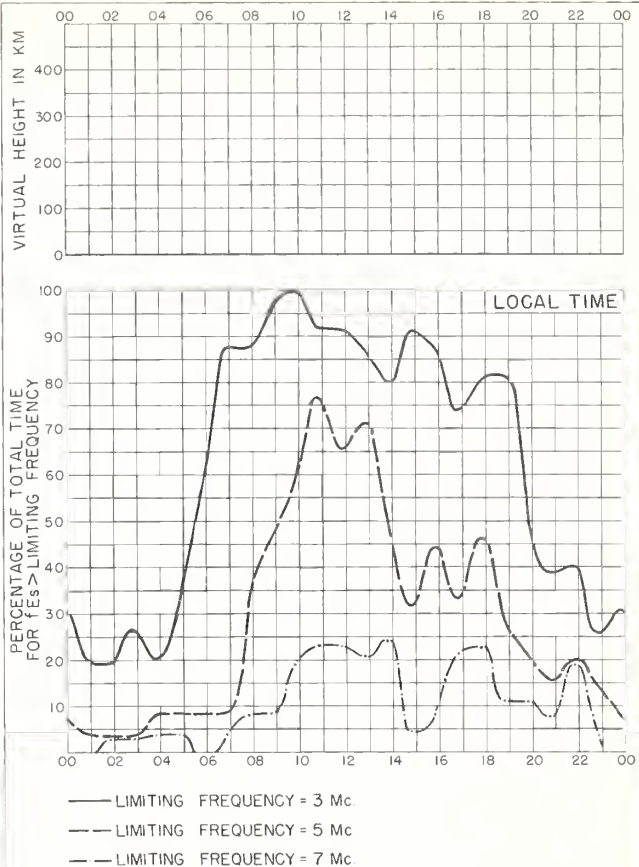


Fig. 136. PORT LOCKROY

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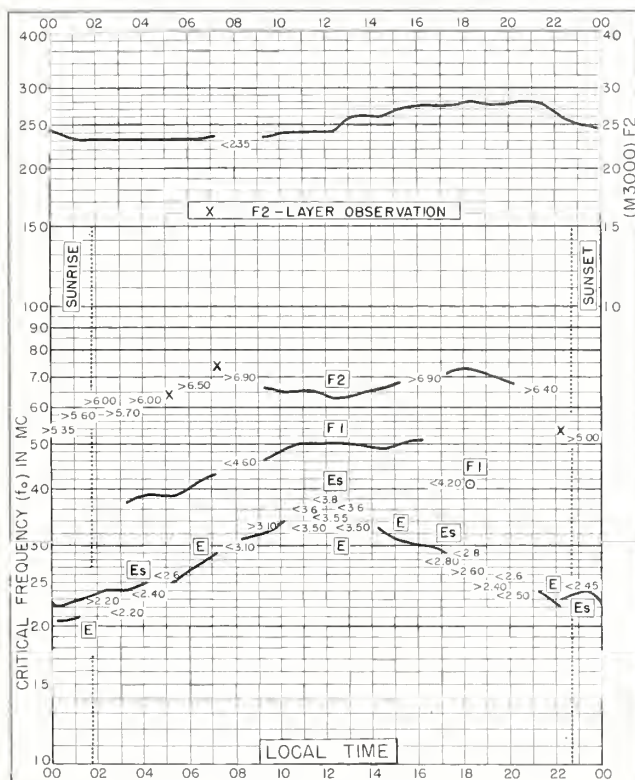


Fig. 137. HALLEY BAY  
75.5°S, 26.6°W

FEBRUARY 1958

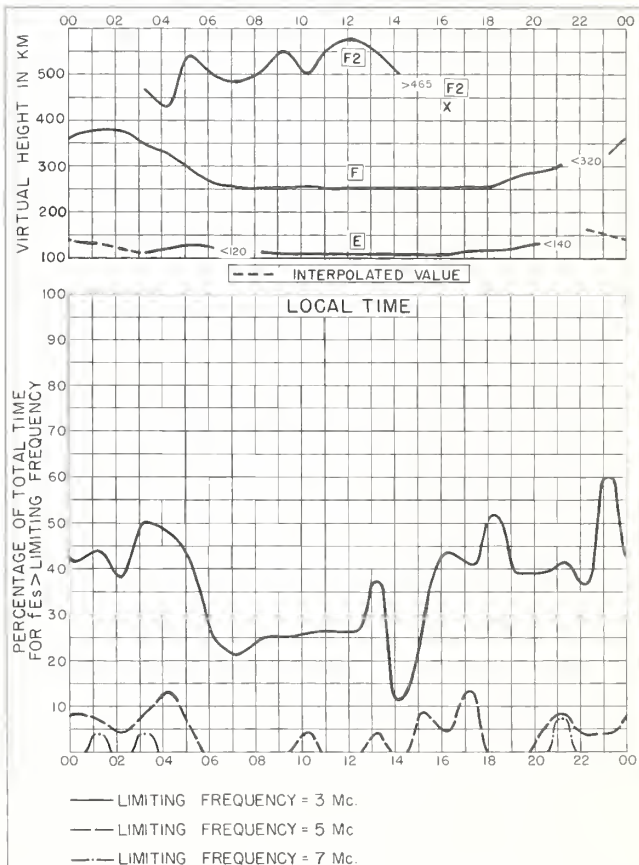


Fig. 138. HALLEY, BAY

FEBRUARY 1958



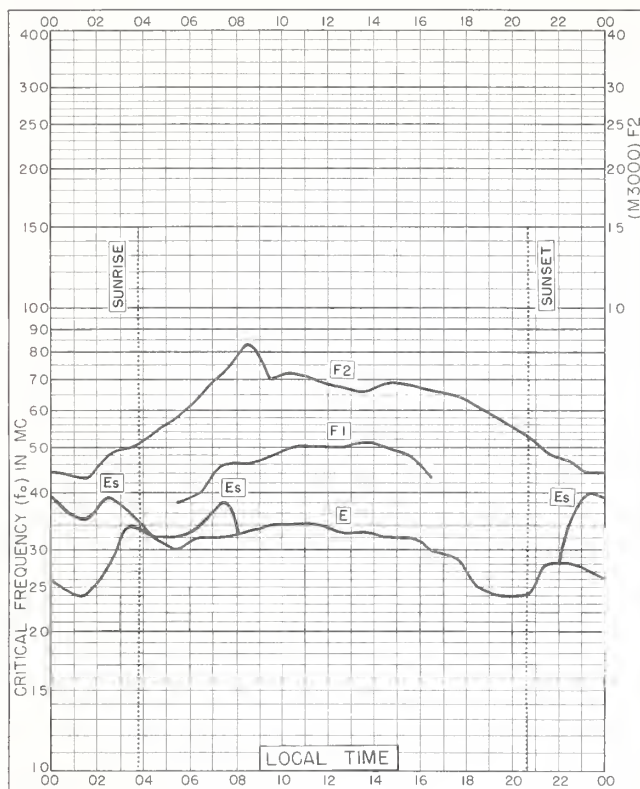


Fig. 139. SOYA (JAPANESE SHIP)  
68.5°S, 37.0°E FEBRUARY 1957

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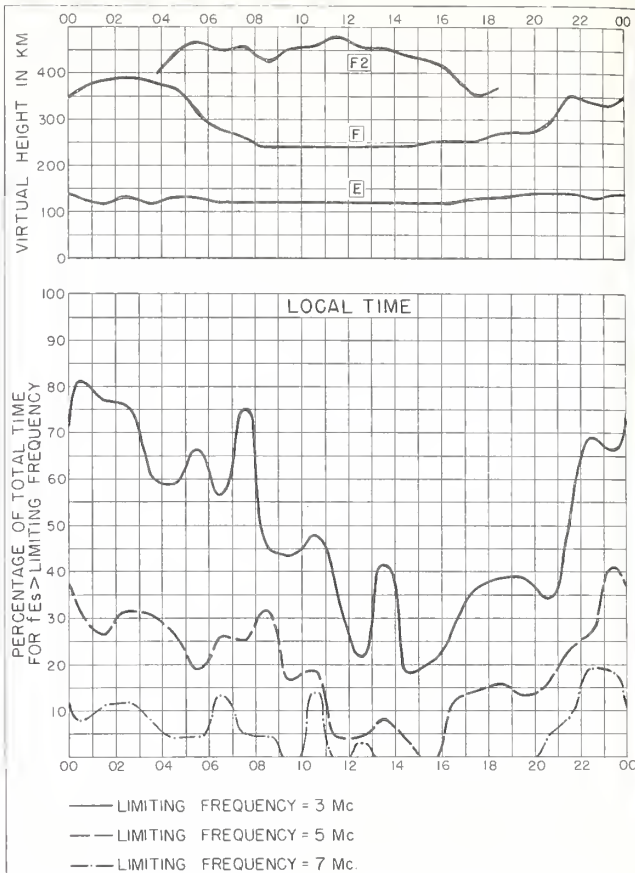


Fig. 140. SOYA (JAPANESE SHIP) FEBRUARY 1957

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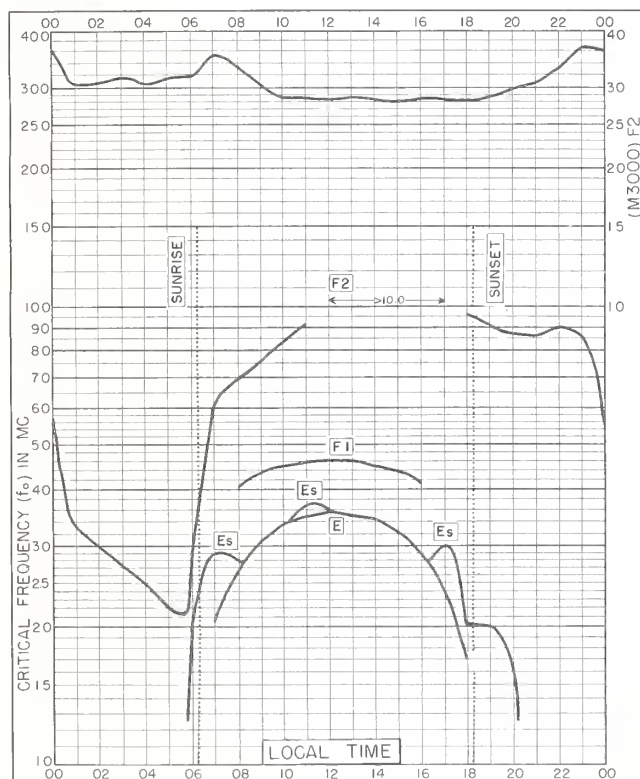


Fig. 141. LWIRO, BELGIAN CONGO  
2.3°S, 28.8°E FEBRUARY 1955

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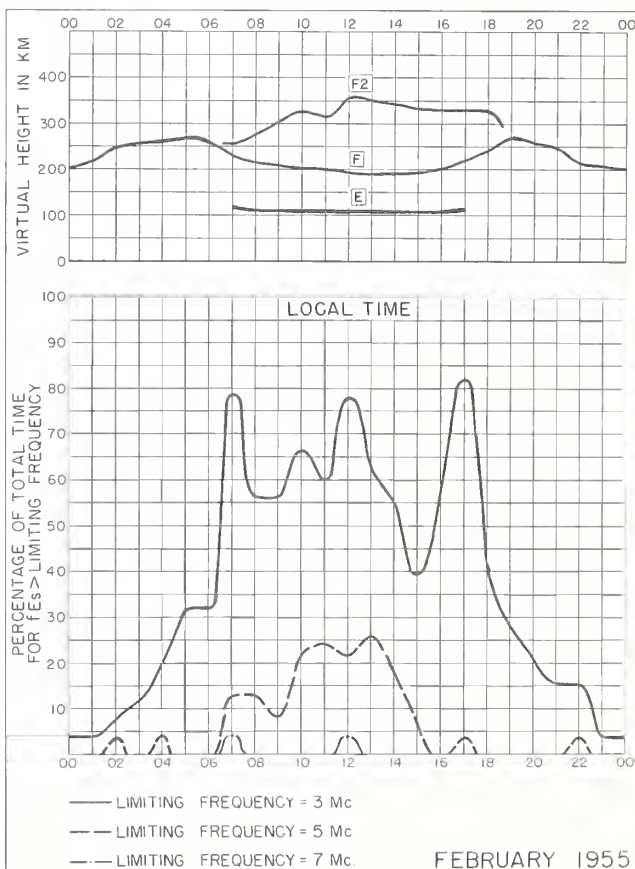


Fig. 142. LWIRO, BELGIAN CONGO  
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### Circulars of the National Bureau of Standards pertaining to Radio Sky Wave Transmission:

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